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1984 and all that . . .

WHEN the national and provincial Press write about computers, they often get confused, with results that can be very funny. Several readers sent in cuttings of different versions of this story; and £5 prizes go to the first two — Malcolm Curry of Kelghley and Lawrence Watts of University College, Cardiff.

Don't annoy the computer or it may seek you, Britain's secretaries have been warned.

For 1984 has already arrived in some offices where machines can measure a typist's performance against an employer's target — and issue disciplinary warnings if it is not up to scratch. They can even time tea breaks.

White-collar union leader Mr Roy Grantham said that this was only one short step away from letting computers fire people who did not comply with their warnings.

"There can be no appeal against the judgement of a machine," he said.

Birmingham Evening Mail

The office staff's union, Apex, says that by the 1980s Britain's offices could be controlled by machines and run by "mechanical bosses." The union has pledged to fight the introduction of the ship, or micro-processor.

Daily Mail

RULES, according to the pragmatist, are made to be broken, and on occasions that should extend to include government legislation. Though often an agonising choice — whether a rule or law should be broken or not — there are times when it seems obviously necessary that such an act should be perpetrated.

Such an occasion occurred last week, when news leaked out that Mostek, the Dallas, Texas based semiconductor manufacturer, had finally decided to locate its new European manufacturing base in the Irish Republic, rather than in Scotland. The thing that finally tipped the balance towards the Irish was the inability of some have said refusal of the UK's Department of Industry to bend the rules of the 1972 Industry Act to allow the company access to development grants.

The reason for this was that the Act specifically states that grants can only be paid to companies establishing a "manufacturing" operation. Though Mostek has an ambitious, three-phase plan for its European operation, it was only prepared to commit itself to phase one, a component testing facility.

Phases two and three, component assembly, followed by full wafer fabrication, would

A time to have bent the rules

come later if the start-up was successful.

The obvious question is: why should the DoI bend the rules to favour an American company wanting to become a multinational? In Computerview's opinion, the answer is that a little pragmatism, where the rule bending actually harms no-one, and can benefit the whole country, seems an obvious necessity.

That Mostek is prepared to commit itself, totally, to only one stage at a time in its European plans simply displays sound business judgment on its part. It certainly does not imply any lack of intention to go towards stages two and three at the earliest moment — unless of course it all goes horribly wrong.

By following this step-by-step

route, a route tracked by nearly every semiconductor company that has set up an overseas manufacturing operation, it will be able to start small, train a kernel of new staff with the new skills they will need, and grow towards a total manufacturing goal in a planned way. By starting with testing, these new staff will not be able fundamentally to affect the production process, but will add value to the products, and receive essential training.

Even though there are over a million unemployed people in this country, by far the most important statistic is the number of unfilled jobs that are left vacant through lack of skilled staff. It is on these jobs that much of the future of the coun-

try depends. The opportunity presented by Mostek to provide a "real time" training ground could have provided many of those skilled staff.

While the new recruits to Mostek will all be starting in the semiconductor business, and many will develop their skills and stay in the business, some will find other areas of interest relating to the business. They may move into applications, software, project management. All are areas where there is a desperate need for skilled people. By starting small, it will also add to the kernel of people needed by the semiconductor industry itself.

This is perhaps the major weakness to the UK semiconductor industry exposed by the creation of Immos, though not necessarily a danger to the company.

By going for a complete operation from the start, it can only find staff from the existing UK manufacturers. It seems certain it will find the staff itself, for semiconductor people tend to be swashbucklers by nature, and like a new challenge. The other companies are bound to suffer, however. They may lose top people, who will be even harder to replace.

Getting Mostek into the UK would also have extended to contact between microelectronics user and supplier that is essential if new products that are not already obsolescent are to be made. Even politicians admit that it is on these products that the future wellbeing of British industry depends.

It seems sad that for the lack of a little bit of rule-bending, the UK has lost a new spawning ground for the needed skilled staff of the future. To rephrase Neil Armstrong, when he landed on the moon: "This is a small step for Irish industry today, but it's a giant leap for its industry of the future." Good on the Irish.

Edinburgh may replace VME/B by EMAS

THE replacement of VME/B by EMAS on the ICL 2880 operated by Edinburgh Regional Computing Centre has again become a strong possibility since the issue was shelved in May of last year.

Writing in the latest issue of the ERCC newsletter, Peter Williams, deputy director of the centre, says:

"Since last May, the workload has risen, particularly through the introduction of a very large number of 'number-crunching' jobs, and the reliability of VME/B has improved."

"The total number of jobs is, however, still small — at present about 300 jobs a day — and it is impossible to forecast when the machine will be able to provide a mixed batch/intermediate service of the type and scale originally envisaged and not required."

"A full connection to the regional network has also been achieved."

Williams goes on to note that the centre is therefore being forced to reconsider the possibility of a change of operating system to enable it to service objectives to be met.

A change to EMAS is therefore a strong possibility, he says. To help existing users, a period of overlap would be required, with a VME-B service continuing until at least the end of 1979.

EMAS, an operating system originally developed by Edinburgh for its ICL System 3 started pilot running on the university's 2870 early last year (CW, January 26, 1979), but is now fully operational since the 2870 at the beginning of current academic year.

June launch likely for Texas' personal systems

THE multi-pronged entry into the personal computer market by Texas Instruments now seems set for June, when a public announcement is expected. Though the company refuses to comment, there are now strong pointers to as many as four systems being included in its range, incorporating such features as plug-in firmware packages, and the novelty of built-in speech synthesizers.

Consultant Ben Rosen, of New York stock analysts Morgan Stanley, has predicted in his latest newsletter that TI will unveil two systems at the Chicago Consumer Electronics Show in June. Known as the 99/3 and 99/4, they represent the low-

cost home market entry, and the professional market entry of the three systems predicted last year (CW, August 24, 1978).

The type numbers are interesting, because they indicate that the systems may well be using TI's family of microprocessors as the CPU. If so, they will be among the first 16-bit personal computer systems to hit the market.

The low end model, according to Rosen, will cost \$500. With just 4K bytes of RAM, and requiring the use of a TV set as a display, it will be in direct competition with such systems as the Video Brain and Tandy TRS-80. Software will be in ROM, and TI will be supplying

plug-in applications and games programs.

The real novelty with the 99/3 will be the option of a \$90 speech synthesiser, almost certainly based on the chip set used in the company's successful Speak 'n' Spell learning aid.

Rosen suggests that it is this model in the range that has been the subject of approval problems with the Federal Communications Commission in the US (CW, January 11).

The second system, the 99/4, seems set to be a competitor for such computers as the Apple II. The predicted retail price is \$1,000, and it will feature a minimum of 16K bytes of RAM,

expandable upwards, and a built-in 13-inch colour monitor display, while a range of peripheral systems which includes two types of printer and a minifloppy disc drive will also be offered. A speech synthesis capability is also expected to be available. Again, a range of plug-in firmware applications programs will be provided.

The third system in the range, a small business system known as the 99/7, has been put "on hold", according to Rosen. With an expected price between \$3,000 and \$5,000, it was predicted last year that it would be capable of handling large data-bases.

There is some speculation in the industry, however, that this system is to be included in TI's public announcements on the range, and that the system "on hold" at the company's Lubbock, Texas, factory is in fact a fourth and more powerful member of the range. TI executives refused to comment on the speculation last week.

'Make govt departments pay for own computers' says Civil Service

GOVERNMENT computers in future should be paid for by individual departments but of their own budgets, instead of from the Central Computer Agency's Computers and Telecommunications Vote, according to a Civil Service Department proposal.

This will ensure that departments value the service they are getting and balance it with other administrative costs, says the CSD.

The CCA will continue to be responsible for the efficient use of computers in government, and will carry out the procurement of equipment either by purchase or hire, but will be paid back by user departments which will have to find the money themselves. This means that the decision to buy a particular machine will be balanced not against other departments' claims for computers, as at present, but against the other claims on the purchasing department's administrative budget.

These arrangements are expected to start operating in April 1980. Parliament will have to vote money for computers to separate departments from then.

Bureau services within the government will operate in the same way, with the CCA Computer Centre charging for time used, as will other departments that share their computers.

According to the proposal, this "will ensure that departments value the service provided properly in relation to alternative ways of getting the work done."

Level 6 Pascal

AN extended Pascal compiler that runs on Honeywell's Level 6 minicomputer has been developed by a US software house, California Software Products Inc. of Santa Ana, California. The compiler operates under MOD 400 or GAO operating systems, on a minimum configuration including 128K words of memory.

Whose finger will be on the data protection trigger?

HAD any of the distinguished members of the Data Protection Committee been present at a recent IDPM meeting, they might well have wished to preserve some personal privacy. Few present had a kind word for their report.

It was pointed out that in nearly 600 pages of privacy proposals, no mention was made of whose installation finger would be on the data protection trigger. Despite substantial evidence and statutory guidelines, not even the section labelled "hypothetical basic scenario of general requirements" tackled the important area of DP responsibility.

While much attention is being paid to the protection of data, similar care is not being afforded to the DP teams. With suggested penalties involving the ultimate deterrent, prison, DP management is naturally apprehensive.

At the meeting the spotlight was well and truly beamed on the DP installation.

With the increasing emphasis on distributed processing, communication networks and the microcomputer, no DP individual could be expected to be fully informed of all these areas, let alone monitor possible infringements of personal

privacy.

Certainly the company senior directors could not be held accountable. The chairman probably could not distinguish between WP and DP systems. Accountants, chief or otherwise, would be similarly out of their depth. They are far more at home grappling with cash flows than data flows. The only data the office manager likes to handle are holiday lists and expense returns.

Meanwhile, the sales manager would probably be more concerned with product dumping than data dumps.

Faced with a visit from the DP Authority, the company will quickly delegate full responsibility to the head of management services. He in turn will pass the buck to the DP manager who, given the choice of ensuring freedom of personal information or liberty, will lose no time in calling in his senior analysts.

All current work projects will then have to be buffered while the DP team pore over ill-defined, vintage program documentation.

Hugh Pitcher, from the National Computing Centre, emphasised the importance of good documentation and standards. Although the proposed codes of practice were flexible, there could well be a tremendous upheaval in all installations — with the one notable exception of police file records which are regarded by most as being reasonable and beyond legislation.

The NCC advice was, "If you don't need it — don't store it!"

Only Ted Cluff from the IDPM believed that the proposals were the best set of compromises possible. Most others present at the meeting had practical reservations about privacy legislation. Few installations, it was suggested, could access meaningful information. Even payroll runs tend to be shrouded in code, mnemonics and anonymity.

In any case, personal information files are seldom held on computer systems. They are more likely to be locked away in a filing cabinet and therefore exempt from the Act.

However, Colin Smith, chairman of the branch, produced several practical pointers, including the suggestion of a self-destruct button built into every application program and the establishment of off-shore data havens.

As a result, it would not be surprising if the Post Office reported a surge of interest in establishing direct data communication channels between the UK and Liberia. And the sales of personal filing cabinets should likewise expand.

Ten years ago...

COMPUTER WEEKLY, APRIL 10, 1969

PIONEERING NCC director Gordon Black resigned to become Professor of Computation at Manchester University and director of the Regional Computing Centre at Manchester. ICL still led in the Eastern European market, but IBM had nearly caught up. Digital Equipment Corporation launched its first small computer, the PDP-14. Potter Instrument filed a suit against GDC alleging infringement of disc and tape drive patents. A total of 35 stations were now linked to Bodices. BOAC's reservations system-14 in the UK, 17 in the US, and 18 in Europe. In the Commons, Eric Lubbock said that while the Labour government's legislation should control hours of work of young people at computer sites, which were not included in the Factories Act, a time-sharing brokerage service, limited, centred on Keydon's United 494, was set up in the UK.

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Forth features combined

THE major features of the two versions of the Forth language — microForth and miniForth — have been combined by the designers into one new version, called PolyForth.

In addition to the RCA CDP1802, 8-bit microprocessor already supported by the microForth version, the new variant is available for the Texas Instruments 9900, 16-bit micro, as well as the ubiquitous Intel 8080. By the end of this year, it will

also be able to run on Intel's 8086, DEC's VAX-11 and PDP-11 families, plus the IBM Series 4 and Honeywell Level 6 minicomputers.

The new variant offers a faster dictionary search algorithm, all 10-bit arithmetic, a more secure multiprogrammer and a simpler target compiler. The designers, Forth Inc. of Menhaden Beach, California, claim that this compiler provides several advantages over the previous cross-compiler. These include the ability either to execute the compiled code directly for fast purposes or to output it immediately to any desired media.

The standard PolyForth package uses 4K bytes of memory, with an additional 2K bytes for the assembler and test editor.



Comart's marketing director, John Lamb, holds the MicroBox, the company's first venture into manufacturing. With a move to a new factory scheduled for the end of this year, Comart now plans to enter the manufacturing arena proper. Like the MicroBox, the products it makes will complement rather than compete with the US systems it sells in the UK.

and a software support specialist — when they can be found. Both directors admit that locating the right staff is a current problem.

The software support specialist will be responsible for developing a second string to Comart's "manufacturing" effort, that of business-oriented software packages.

The move into manufacturing will be carried out without outside financial assistance. According to David Broad, the company's current growth rate of 15% per month provides sufficient resources to fund the move internally. He is more than pleased with this growth rate.

ANOTHER STEP FORWARD

Having pioneered 1200 bps full-duplex modems in the UK CASE announces a new modem — four times faster than Datel 200 and with additional benefits.

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PEOPLE AND EVENTS



BIS directors appointed

BIS Applied Systems has appointed David Dryer and Derek Potts as associate directors. Potts has been manager of the company's training division since 1977, and Dryer has worked in the consultancy division where he has led the development of the company's management services. Terry D'Connell, manager of development division, is an executive director of the board, as is Gerry Richings who is manager of the Manchester office.

Walkerden to head British Olivetti

THE appointment has been announced of Keith Walkerden as managing director of British Olivetti, one of the largest subsidiaries in the Olivetti group. Walkerden is currently managing director of Olivetti Australia, and has been with the company for the past 18 years. He will be replaced by Ika Honigstok, who until now has been northern division manager, with responsibility for Queensland and the Northern Territory.

Throughout his career with the company Walkerden has held both sales and managerial positions, and in his new role will replace N. Colangelo, who is returning to his native Italy.

Liz Attewell has joined SMR Sales and Marketing Recruiters to set up a new company, SMR Technical Sup-

port People. She was formerly UK selection and appointments manager for Control Data Institute, the educational services division of Control Data.

Barry Foster has joined Digico's scientific and industrial sales team as a salesman for the East Midlands. He was formerly a salesman with IBM, having started his career as a field engineer with Burroughs. Previously general production manager for Digico, Frank Gibbs has become field service engineer for the company.

Jerry Thompson, who is chairman and founder of Shade Computer Services, has been appointed an industrial representative of the newly formed BCPL user group committee. The committee was formed earlier this month of Cambridge university at the group's inaugural meeting.

Mike Taylor has become European technical support specialist with Digi-Data, with responsibility for sales, support and customer training. He was formerly with Ragan International as assistant engineering manager.

Bob Lambie, after working as service manager for Wright Air Conditioning for the past three years, has been appointed to the board by Wright Air Conditioning (Scotland).

Paul Kanne has been elected to the newly-created position of executive vice-president of Penril. He was previously vice-president and prior to that chief financial officer.



Activities including a sponsored radio show by students at the University of Kent at Canterbury have raised money towards computer equipment for a blind student. Six student disc jockeys were sponsored to work 12 hours each as part of a marathon.

Ed Cooper has been appointed field sales manager of Livingston Hire. This promotion comes six months after Cooper joined the company as a salesman. Previously a sales office manager, Mike Collins has been appointed sales manager of Livingston Hire.

Andras Caspar has become Gaelic applications manager for the US subsidiary of Comped. He joins the company from Monolithic Memories where he was mask design manager, and in his new position will be based in San Francisco.

John Cough has become vice-president, software, for Apple Computer. He was formerly new products manager. In his new position he will have responsibility for all systems and applications of software development.

Peter Atkins has joined Arbut (UK) as project leader. He was previously senior computer auditor at Barclays Bank.

Nail Chalmers has joined Computer Machinery Company as territory manager for Tyneside, Teesside and Humberside. He was previously a salesman with NCR.

Charles Johnson has joined Pricom as vice-president of operations. He is joining the company as vice-president of manufacturing for Diablo Systems.

George Eaglesham is retiring from Design Office Consortium where he has been financial controller of the CAD Centre. His place has been taken by Ted Mellish who has come to the centre from the Doherty Centre.

Kelher New has become product manager with Moore Parag, where he is to head the launch in April of their small computer supplies package. He was formerly account executive of small business machines for Moore Parag South Africa.

DIARY

APRIL 18
Specialised OMS techniques. 10.15am. BCS Specialist group, University College, London WC1.

APRIL 18-19
Which word processor, and why? Initech, Regent Court Hotel, London W1, 11.30.

APRIL 19
Trade union perspectives. Ian Benson BCS London branch, Wadford Hotel, London WC2, 12.00.

APRIL 20
Seven-sided success and more. BCS Belfast, Uprichard Park, Belfast. Details from W and F Heron, tel Belfast 59415.

APRIL 21
Eurocom. P. Kelly. BCS data communication specialist group. BCS local quarters, 13 Mansfield Street, London W1, 12.00.

APRIL 24
What next in the office? NCT, Fair Royal, 108 Regent Street, London W1.

APRIL 25
Microprocessors. T.G. Reed, Rotherham Road Laboratories, English Church, 11.30.

APRIL 26
BCS Hampshire branch. Visit to Exco, Fawley, 12.00.

APRIL 27
Planning the 1981 census. BCS Local

Government group, West Midlands County Council, 1 Lancaster Circus Birmingham, 11.00. Please note: only on 01-826 2333 if you wish to attend.

APRIL 21-23
IBM CHA annual forum, 9 at 20 Hotel, Bournemouth 14.00.

APRIL 25
BCS Sussex branch. Visit to 22 Colindale Avenue, Watlington, 11.30.

APRIL 26
Inter-active computing. Study 64, 11.30am to 12.30pm. Visit to 22 Colindale Avenue, Watlington, 11.30.

APRIL 27
Data protection legislation. BCS Leicestershire branch, 11.30am.

APRIL 28
Computer aided drafting and design office of the 1980s. BCS computing techniques section, 11.30am.

APRIL 29
Picture and demonstration. BCS West Wales branch, PYE TMC, 11.30am.

APRIL 30
The significance of computing. BCS South West branch, Wadford Hotel, 11.30am.

APRIL 31
South Wales branch. Curran Road, Cardiff, 11.30.

APRIL 32
Computerised hospital outpatient projects. BCS Medical (Scotland) group, Southern General Hospital, Glasgow, 11.30.

Reader's complaint inspires package

ICL is taking advantage of a Philips user's discontent to develop standard software for the motor parts business. The user, SMG Motor Factors of Stourbridge, Worcs, desperately needs a bigger system to handle its stock control operation and ICL has offered to supply SMG with a complete system for £20,000, charging nothing for the software.

W. German authorities flout data laws

DESPITE West Germany's Data Protection Act, and similar Acts in several separate states, many national and local government authorities are still selling name and address lists on a large scale, according to the Federal data protection commissioner, Hans Peter Bull.

Sometimes these sales comply with the Act, but often they do not, according to Bull. Apparently local authorities in particular do a brisk business in selling details of marriages, births, school-leavers and the like to mailing list firms, banks, and similar agencies. The driver and vehicle licensing centre in Flensburg apparently earns between £300,000 and £750,000 a year selling registration data.

One sale that Bull has censured was the passing of a newsletter mailing list from the Economic Cooperation Ministry to the Protestant Church in Bavaria, which wanted to send out a questionnaire. The list contained information on Church and trade union affiliation, and so its sale was in fact a breach of the Act.

The Act forbids the passing on of a name and address without the subject's permission, but according to Frank Koch, a Bavarian lawyer, many links and insurance companies include a provision in the small print of their contracts which constitutes this permission being given. Thus, he says, the Act "is transformed into a useless scrap of paper".

The Directory and Direct Advertising Association operates on a voluntary basis, what is called the "Robinson Crusoe List" on which people can ask to be put if they want to be taken off advertisers' mailing files.

Scanners for China

A CONTRACT for the first general-purpose CAT scanners to be sold to China has been signed by EMI. The equipment, designed for the Cancer Institute of Peking, consists of two whole-body scanners, a 7020 and a 7070, and an Emiplan 7000 radiation therapy treatment planning unit.

Civil servants' dispute

From front page

Many paid through that computer.

A more recent victim of the escalation is the Customs and Excise cargo section at Heathrow Airport, which has been subject to partial strike action for almost two months.

SMG, a first-time user, complained to Computer Weekly earlier this year that the Informer VRC sold to it by Philips Data Systems was not nearly powerful enough to handle the volume of stock updating involved in its business (CW, March 1).

Philips offered to part exchange the Informer for a much more powerful disc-based P410 system, but Philips wanted the £10 system at £36,000—about £20,000 for the hardware plus £16,000 for the software.

An SMG spokesman told

Computer Weekly, "ICL is writing all the applications software for us and plans to offer it to other motor factors as a package. The ICL machines will be installed in three or four weeks."

Philips told CW that it would help SMG find a buyer for the Informer and guaranteed to provide the Informer's new owner with full hardware and software support.

Indian govt order goes to CDC

THE central mainframe for India's ambitious national informatics centre is to be a Control Data Cyber 172.

Funded by the United Nations development programme, the NIC is to be a hierarchical network of minicomputers and



mini-based terminals serving all the major departments of the Indian Government (CW, November 2, 1978).

Finalists for the £2.7 million contract, which carries much prestige, were CDC, and Burroughs with a B7800.

Govt chaos over 2970s

From front page

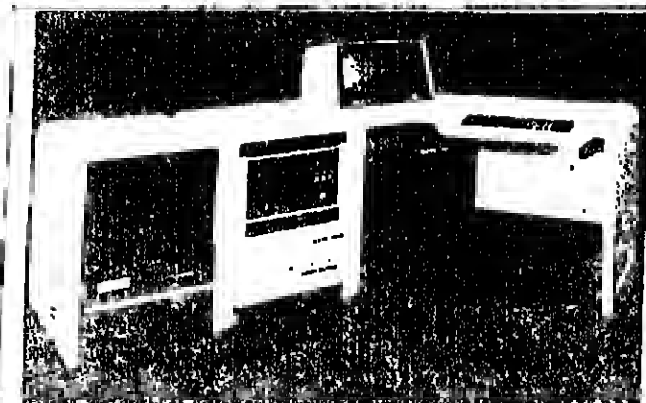
running of systems under emulation.

Some of the original 1900 systems are still running under emulation on the 2970s, although most have now been converted to run under VME/B along with new systems.

Replying to the criticisms in the director of audit's report, the director of administration and management services pointed out that the review on which the report was based took place during the most troublesome period of changeover in July/August last year.

He admitted that getting the 2970 system to operate satisfactorily had been more difficult than expected and that the difficulties would have been more easily resolved if the 1900s had been kept as back-up after June last year when the changeover was made. But this would have cost \$500,000 in rental.

He revealed that ICL had supplied 750K bytes of additional memory for the 2970s at no extra charge as part of its efforts to improve their performance.



KEYPACK. A Key to Disk system with RJE & batch processing.

Simple, but powerful KEYPACK offers ease in formatting, validation, verification and reformatting. Without disturbing the data entry operation, concurrent programs can be run to support the local processing. Up to 31 keypads, local or remote, are supported by a 16-bit microprocessor (up to 256K bytes). Disk memory ranges from 8.8MB to 400MB.

DATAPACT. A stand alone business system.

DATAPACT is an interactive, multiprogram, stand alone business system. Sequential, random access, multi-index files ensure rapid data retrieval by all users concurrently. Each user is made to feel that the entire system is dedicated to his needs.

DS 377. IBM Replacement VDU.

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THE impact of the microprocessor revolution was explained at a graduate conference given by Plessey Telecommunications. Some 170 new graduate trainees attended the conference, where they heard managing director Des Pitcher stress the importance of the development of young talent in a period of "soaring developments" in the telecommunications industry. Our picture shows some of the graduate recruits looking at an electronic unit during a tour of Plessey's Basingstoke site.

Liveware Saga by Don



Special travel arrangements to visit the Compec Europe Exhibition (Brussels)

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MICRO NEWS

New bubble market with Bell technique

THOUGH some investment analysts remain sceptical about the rosy future that has been foreseen for bubble memories, the news that Bell Laboratories could be producing a single, 1 Mbit device (CW, March 29) within a year highlights the potential of this new technology once again.

The development team, led by the co-inventor of the technology, Andrew Bobeck, has found a way round some of the design and production problems that could have restricted its development. The memories Bell plans will be a third the size of those currently available, and have a data rate that is ten times faster.

Bobeck announced the development at a conference on magnetic bubbles in Palm Springs, California.

His team, Stuart Blank, Duane Butcher, Frank Clark and Walter Strauss, see the development extending the potential of the bubble memory beyond the market for replacing existing magnetic media, and into the telecommunications area. Bell Labs is already using bubble memories in some telecommunications applications, notably the 13A Announcement

Help and advice from users' club surgeries

"DOCTOR, doctor, my computer's got spots before the eyes."

"Then stop using the light pen."

No? Maybe not, but it is the sort of corn that immediately springs to mind with the announcement of what basically seems to be a good idea.

Micus, the new microcomputer user club formed by the Institute of Data Processing Management, has decided to hold monthly surgeries for existing and potential users, at which three or four specialists will be on hand to give help and advice.

The first is planned for April 26, and will be held at 88 Oxford Street, London W1, between 4

and 6 pm. The second, in June, will be a surgery dedicated to advice and help for users of the Commodore Pet. Later in the summer, the club plans to hold a telephone surgery, a phone-in for people who cannot get to London.

The May surgery is being missed to make way for the annual meeting of the IDPM. Scheduled for May 23, the AGM will incorporate a conference on the subject of Micro Management.

To be held at the Bloomsbury Centre Hotel in London, it is expected to explore such topics as the impact of micro in traditional data processing, and some ideas of the office of the future.

Mixed-disc easier to use with CP/M change

A RELATIVELY simple modification to the popular CP/M operating system for microcomputers has been written by Abacus Computers, and allows the use of two different sizes of floppy disc drive in one system configuration. According to Abacus managing director Derek Rowe, this overcomes one of the few weak spots in an otherwise excellent operating system.

The advantage of the modification, Rowe says, is that mixed disc operations can now be employed with total transparency to the user. He feels this should be of particular interest to potential OEM systems builders.

The basis of the change is the

addition of a second disc map table. The standard CP/M has one such table, which maps both the logical and physical sectors of just one size of floppy disc. The second table added by Abacus is held in the CBIOS section of the operating system — 512 bytes of user-definable operating commands.

When required, this second disc map is written into the system memory and utilised in the same way as the original map. Changes in disc size can therefore be accommodated while the system is running.

According to Rowe, the cost of the modified CP/M will be about half as much again as the standard system.

Two new models from AMI

GREATER integration of the systems functions on board the chip are provided on the new 6802 and 6808 microprocessors from AMI Microsystems. Both chips are object code compatible with the 6800 and can

address up to 64K bytes of memory. Each incorporates clock circuitry, thus eliminating the need for the 6807 clock chip required with earlier microprocessors. The 6802 includes 128 bytes of RAM.

Wide range of systems to rent

EVEN though microcomputers have drastically reduced the cost of obtaining computing power, they can still represent a considerable investment for many purchasers, and the prospect of buyers making expensive mistakes in their choice of microcomputer system has attracted another company to start up a rental service for small systems.

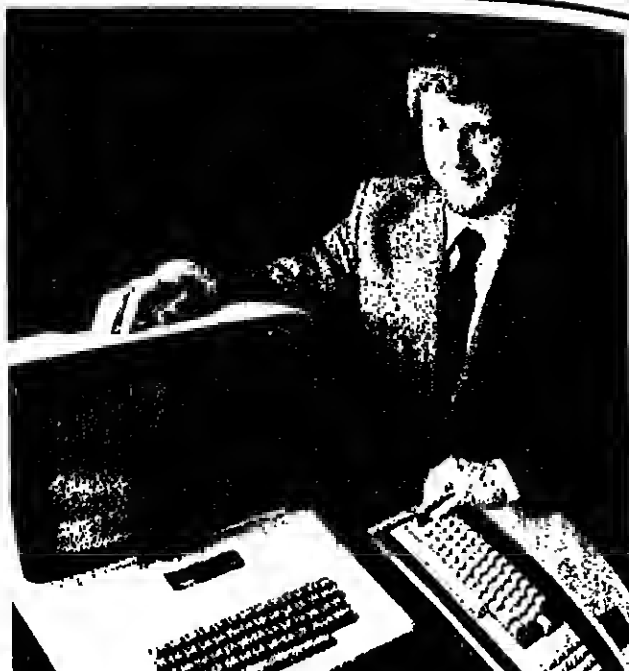
This latest company is Microdigital, the Liverpool-based computer store, and its rental operation, Microdigital Hire, plans to have available a wide range of systems to choose from. These will include the Commodore Pet, Nascom 1, Exidy Sorcerer, Tandy TRS-80 and the Apple II. Prices for hiring these systems will range from £2 a day for a Nascom 1 to £10 a day for an Apple II with 48K bytes of memory.

A full range of peripheral systems are also planned to be available, as well as software libraries currently being developed.

specialist high technology investment company in Walsley, Mass, has for example discontinued many of the enthusiastic predictions about the bubble memory market, and has put a limit of 230 million dollars a year on its predictions for 1981 factory shipments of the device.

The basis of these predictions was the expense of using the device as replacements for moving head disc memories, the resulting conclusion being that the major market would be in competition with fixed head systems only.

Bell apparently feels that such market estimates were amply justifiable, before this new approach to bubble memory manufacture was developed. However, the possibility of much lower unit costs that the development heralds could change this view.



Future developments will include the availability of North Star Horizon and Vector MZ systems through the hire company. The new operation is to be managed by Mike Maughan, seen here with an Apple II and an Exidy Sorcerer.

By Martin Banks

A BORING WASTE OF TIME, OR A WAY TO GET LATEST IDEAS?

What do you get out of a week at a conference?

By Nicholas Enticknap

A CHANCE to sample the fleshpots of the big city? A refreshing break from the daily grind? A stimulating opportunity to gain a perspective on the latest ideas? Or a boring waste of time spent listening to self-opinionated nomenclatures who like hearing the sound of their own voices?

These are the sort of views you are likely to hear whenever the subject of conferences crops up. In general, they do serve a valuable function; at least, that is the verdict of many of our readers who tell us how they appreciate Computer Weekly's regular coverage of upcoming events (see below).

The trouble is that there are too many, all of them covering subjects of compelling interest. But the value to be derived from them is virtually impossible to measure.

They provide information, they give a perspective on a particular area of development, but they don't give you a nice quantifiable saving which can be duly gift-wrapped and presented to senior management for approval.

In some cases, obviously, the value can be taken for granted. If you are just about to acquire a small business system, it makes sense to go to a conference on how to buy a small business system. But justification is rarely as easy as that.

For those involved in high level strategic planning, it's part of the job to keep abreast of the latest developments, and conferences are a good way of doing so. But if your responsibility relates more to day-to-day corporate activity, two or three days away from the office is much more difficult to manage.

Apart from the question of acquiring needed information, there are other benefits to be gained from going to a conference. Simply getting out of the office can help you get a

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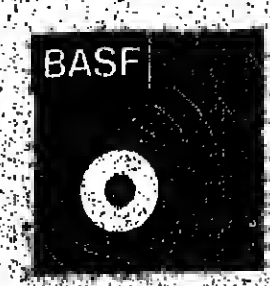
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Improve its working relationship with BASF storage media — the original

Conferences are almost an industry on their own, as witnessed by the entries at the foot of this page. Nicholas Enticknap, himself a regular "victim," takes a light-hearted swipe at the conference scene. He urges that they should be better planned and documented.

authoritative speakers, leading manufacturers, specially tailored for, of great interest and benefit to, all of which tell you nothing. And the wording in general borders on the meaningless.

Conferences can easily degenerate into mere chat-shows if they are not carefully thought out and properly structured. The subject should be clearly defined, and the various aspects to be tackled by the different speakers should be precisely delineated.

The speakers, too, are worth considering. It is sad but true that some people more or less make a living out of the conference circuit, skillfully disguising the same talk to cover a whole variety of different topics. Such people are usually entertaining speakers, but their familiarity with the subject under discussion varies from remote to non-existent.

These charlatans are betrayed in publicity material by a lack of detail in their CV. If they have any experience worth mentioning you can be sure the promoters won't be trying to hide it from you.

A final point to consider is the question of documentation. This is always a good indication of the quality of planning that has gone into the conference.

If proceedings, which include a write-up of what each speaker is going to say, are to be ready in time for the event, the organisers must start working several months in advance.

Good documentation also gives the delegate a chance to concentrate on what the speakers are saying, rather than having to take notes. And it gives him something to show to his own manager when he gets back. It's always a good tactical move to have something positive to show for those few days spent out of the office.

CONFERENCES

THE INSTITUTION OF ELECTRICAL ENGINEERS is organising a major conference as part of Communications 80 for the exchange of information and views on the latest trends and developments in communications technology. The aim is to highlight the user aspects of communications equipment and systems. It will take place at the Metropole Hotel, at the NEC, Birmingham, from April 15-16 and 17-18. For further information contact TMSA/TTS, TMSA software seminars, c/o State of the Art Ltd, Victoria House, Suite 501, 25 Abchurch Lane, London, EC4A 3DF. Tel: 0255 512242.

THE SELLER II workshop on methodology of interaction will be held from May 7-10. This follows the flip workshop on methodology in computer graphics which took place in Sallat, France in 1978. The second workshop aims to solve some of the problems in understanding the psychological implications of interaction and defining the dimensions of interaction. Details may be obtained from Professor F.A.A. Hogwood, SELLER II workshop, 25 Abchurch Lane, London, EC4A 3DF. Tel: 0255 512242 ext 372.

TMSA and TTS are sponsoring two separate two-day events. Managing software projects and software cost estimating will both be held in London on May 14-15, and in Geneva on May 17-18. For further information contact TMSA/TTS, TMSA software seminars, c/o State of the Art Ltd, Victoria House, Suite 501, 25 Abchurch Lane, London, EC4A 3DF. Tel: 0255 512242.

BIS-DELTAK has chosen the theme of the impact of computers on productivity for its 1979 international training conference. Speakers will include Dr Rhoder Boyson, MP, Or James Meritt and Michael Jackson, who will discuss the implications of change in technology and the increasing demand for skilled DP professionals. The conference will take place at the Sheraton Skyline Hotel, London Airport, from May 21-23. For further details contact the Registrar BIS-DELTAK, 25 Abchurch Lane, London, EC4A 3DF. Tel: 0255 512242.

A WORKSHOP designed to assist librarians to exploit research findings, has been organised by the Librarians and Librarians' Association. It is entitled Exploiting research: a LIBO workshop, and the speakers include J.M. Brittain, C. Harris, L. Johnson, S. P. Wilson, and others. The workshop will take place from June 22-24 at Rotherham Manor, Tisbury, Wiltshire. Details may be obtained from Alan Cooper, 25 Abchurch Lane, London, EC4A 3DF. Tel: 0255 512242.



French seek end to incompatibility

THE French Administration has proposed standards for videotex services based on the feeling that they will in future have to interwork with other services such as telex, teletext and facsimile, not to mention teletext which Bernard Marti, the author of the article on the French systems, refers to as "broadcast videotex".

Studies on broadcast videotex started in the CCETT, the Centre Commun d'Etudes de Television et Telecommunications, at Rennes, France, in late 1973, primarily because the UK teletext system was regarded as too closed and integrated to be readily adapted to French requirements.

The first stage of Antiope, the development of a modified television receiver, led to the implementation of a packet switched broadcasting network which was used to offer an experimental stock exchange information service in May 1977.

By August, CCETT was able to demonstrate an interactive system at the Berlin Radio Fair. The system was linked to a simple database on its time-sharing service in Rennes by a leased line, via a terminal concentrator in Berlin.

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international
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Donald Kennett surveys viewdata/videotex

The race is on to set standards and reach mass market

FIRST in the field, Prestel is still in its infancy, but the international race is on to set standards for electronic information systems of all kinds, to discover ways of integrating different systems, to stimulate mass production and the mass market.

The Post Office Prestel system has had 60 ports available for its test service since October last year, which it says is more than adequate for the number of terminals in the field, but at the same time it has discouraged organisations whose use of the system would be "excessive", such as the Stock Exchange, betting organisations and suppliers of coin-operated public terminals.

Coin terminal manufacturer Cherry Lorraine's marketing manager, Richard Davies said it would not be worthwhile setting up production for fewer than 100 sets and the Post Office had limited it to six initially and 30 from the launch last month of the partial public service for domestic users in London only.

VIEWDATA and other electronic information services seem poised to enter our lives on a large scale, but how much effect they have on us will depend on how cheap and how easy they are to use both for information providers and end users.

Cheapness and ease of use are needed to set up a snowball effect in which greater use stimulates the provision of more information and other services, more enhancements to user equipment and yet cheaper products. Without this kind of interactive growth it is doubtful whether information provision can be profitable.

These considerations form part of the overview by Richard Clark of newly-formed information consultants Joan de Smith and Partners in a series of six articles in the April issue of *Computer Communications* covering progress in several countries on viewdata, videotex and the various versions

Canadian service aims at integration

THE proposed Canadian videotex service is now called Teldidon, and its developers are working on it with an eye to the future. A major element of that future is seen as integration with future services and to this end they are catering for high resolution graphics, as well as aiming for independence of as many elements of the total system as possible, including the database access method, the communication medium and the terminal capabilities.

The future is also seen as bringing the possibility of videotex terminals which will generate graphic images, using the picture description instructions or PDIs now being experimented with, and manipulating them using picture manipulation instructions or PMIs such as rotate, scale down and transpose.

An image could be transmitted to another suitable terminal and the users, say an architect and his client, could manipulate the same image conversationally using joystick or light-pens, with only the modifications passing between terminals as PMIs, instead of renewing the whole image each time.

Transmission of information in Teldidon uses standard seven-bit code plus parity and the Shift Out control character defined in ISO 646 to change to graphics mode. It is designed to be compatible with existing business terminals and the emerging teletext-international standards as well as videotex.

If a terminal cannot handle the graphics it receives it ignores them but this does not prevent it receiving the text. In high resolution graphics the text is

Set makers and rental organisations have commented that there is no point in mass producing sets until there is a public service for them to use on, and that changes have been made since the test service launch that, for example, the Texas Instruments decoder module can only take one original telephone number allocated by the Post Office and this is proved to be the less reliable number of the two available.

A catalytic effect on the market penetration of Prestel could come from foreign set makers who from September will be allowed to sell sets for use with the service, so long as they meet the Post Office's safety and technical requirements. The UK set makers are not keen to face the protection of their agreement with the Post Office which expires in 1981, but the alternative is that viewdata, the system which prompted development of many other versions of videotex all over the world, will lose its lead and see another implementation clean up the world market.

	Number	Growth
Prestel computers	2	About 20 during 1979
User ports (lines into computers)	84	4,000 during 1979
Information providing organisations	154	0 (waiting list about 70)
Information pages	95,500	3,500/week
Test users (including about 100 on PD and TV-company premises)	304	30-50/week

Table 1: Post Office viewdata statistics (UK)

are collectively known internationally. Clark sets the interactive narrowband videotex services in the context of the broader field of electronic publishing.

The competition between systems is reflected in the competition between priorities in standardisation work. Ease of implementation vies with compatibility, both with existing data transmission standards and with likely future text transmission standards.

Canadian studies into high resolution graphics on videotex aim to provide interworking with facsimile systems, as well as better image display, whereas Australia, South Africa, Hong Kong and the USSR are all interested in simple systems.

Alongside the narrowband interactive videotex systems, Clark mentions the narrowband broadcast or teletext services, one of which is in Germany and confusingly known as Videotext with the extra "t". Other related categories are wideband broadcast and wideband interactive services. Outside the four categories other communications services on their own development path are expected to merge eventually and therefore must be taken into account as early as possible, but the details of the merging cannot yet be foreseen. These include telex and its enhanced future version for com-

Swedes test Nova based DataVision

THE Swedish test information service is based on a Data General Nova supplied to the Central Administration of Telecommunications as a turn-key system by the Swedish company AU System AB. The terminals for the 15 information providers have local editing capability and were developed by another Swedish company, Beijing.

The system, called DataVision, was initiated after discussions with the UK Post Office, but is being developed independently in several stages. After starting with a one-way information service, interactive working will be added, followed by alternatives to tree-searching

Finns try out Telset

FINLAND has a test viewdata service called Telset with 1,000 frames and 30 users, the result of a co-operative venture by three companies which began in 1973. Soon after details of the UK Post Office's work were published. Last year, the system was modified to be compatible with Prestel and the test service began in June.

The system software runs on a Digital Equipment Corporation RS-11M V3, and while the domestic terminals are similar to Prestel sets, the business terminals are black and white

communicating word processors referred to, again confusingly, as videotex.

Wideband systems use carrying capacity either to broadcast something like frames of information per channel (instead of about 100 on narrowband system), or they can carry a full video signal only has to be demodulated to go on the screen instead of being decoded as characters to be signalled in the set. Examples of this type in the UK, Canada, Japan and Reuters Market.

Examples of narrowband broadcast teletext services include Ceefax and Ordis in the UK, Biblos in Belgium, schirzeitung and Videx in West Germany, Text-Sweden and Teletext in the Netherlands and Holland.

Problems which could set back any of the systems include potential responsibilities for defence or obscene material, discretion against information providers, copyright issues and advertising boundaries between broadcasters and publishers. These have to be redefined, and regulation of message sending may need some changes.

Confident that a billion dollar income figure will be passed this year, PAUL ELY, Hewlett-Packard's computer sys-

Hewlett-Packard finds its role

FOR a computer company that, in the past, has had to overcome something of an identity crisis in terms of product range and market share, Hewlett-Packard has come a long way.

Describing the company as "low profile", Paul Ely, Hewlett-Packard's computer systems division vice-president under-estimates the advances the company has already made, and is intending to make over the next few years, but that is because he too is part of that non-aggressive strategy.

"It is our expectation that we will be the next billion dollar computer company this year," he said confidently. "That is our stated goal, and our performance in the first four months gives us great courage that we will easily surpass that figure."

"The secret of growth for the last 18 months has been to have a very balanced programme. No single element has fuelled most of our progress."

Were there any plans to change this approach and rely on just a few products for revenue, or to carve out a large chunk of the market with a major new product announcement?

"No, I don't think so," replied Ely. "I feel that the kind of growth I am talking about cannot be achieved with one product. We expect to add a quarter of a million dollars to our computer business this year and you don't do that with one product—or maybe you do, but I don't want to bet on it."

"I would much rather do that kind of thing with four or five products, all of which are streaming along nicely. This kind of strategy allows us to continually upgrade our business in each of those product lines, which is a Hewlett-Packard trait. We don't want to surprise the market by making a major investment and then popping out the product to see what happens."

With that in mind, has Hewlett-Packard defined future product targets?

"Yes, I think we have," said Ely. "We feel the kind of products Hewlett-Packard has today represent a very promising area for us, and they are therefore something we should stick with as opposed to branching out into quite different areas."

"Several years ago, with the start-up of our HP3000 range, we saw fast growth in the business data and distributed data processing areas — in fact, it represents an increasing share of our total business. On the other hand, the HP1000 has been gaining momentum too; very respectable growth rates are being achieved with that product."

At present, the company splits its computer systems division into two main areas, the technical and business computer families which provide \$750 million annually.

"Technical products, which consist of both desk-top and technical minicomputers, account for about 50% of our total computer business, while the data processing line gives us about one-third of our business," said Ely.

Did Hewlett-Packard's strategy go as far as mounting an attack on its main competitor Digital Equipment in a bid to gain the number one minicom-

puter division vice-president (right) talked to ROBIN WEBSTER about the company's philosophy and future plans.



remains open," he said. "Today we feel that for two reasons it would not be a good choice. We think that we have a proprietary advantage in the process technology and therefore see no reason to give our competitors the opportunity to use it. It would also be wrong of us to limit our production facility to any particular circuit. The hardware alters so rapidly that if we did that, we would be producing out of date technology."

Recent desk-top computer introductions like the HP 45 are doing very well; has this success raised the idea of a "home computer" product line?

"If you look at some of our hand-held and desk-top calculators, they are frequently used as small business systems. The idea of using your calculator as the US for about \$800 is not really useable in that way. You have to get more memory, which costs about another \$1,000, then you need a printing device. If you want to run it quickly you have to get floppy discs. So by the time you have finished, you have spent several thousand dollars."

"I imagine what will happen is that in three or four years' time, we could make a HP35 available at a third of the price it sells for now. We have no real aspirations to go after the home computer market at present."

"If somebody is thinking of business computers, products like the HP 3000 have the reputation required, with our desk-top range we clearly have a leadership position. In the middle of the technical market, while we have a position of strength with the HP1000, in trying to broaden that we do come up against DEC quite strongly. Some people would define being first as total measurement of market share, but we think that markets are defined in some peculiar ways."

Any company wishing to advance must consider the symbiotic relationship of hardware and software carefully but to these Hewlett-Packard adds a third factor—the user. So a "triangle", a carefully balanced system involving all three, is employed.

"Today, when things like the shortage of trained software staff limit user applications, we are trying to make it easier for the customer by making a big investment aimed at simplifying the operation of our computers. You no longer need special skills, you only need to know your company's problem and on afternoon to learn how to use this very powerful tool."

"Making the investment once, we save thousands of customers from making an equivalent investment individually."

Is this where the microprocessor has forced some changes in company attitude?

"Well, no, not really, and it just depends on your view. My view is that the microprocessor is just one more step in a logical sequence of evolution that was going on a long time before the micro and which will continue on beyond it. Certainly from an application point of view, the availability of the micro might make quite a change in what we can do, but I don't think it has changed our concept of computers. They don't look a lot different. It is our peripherals that have been affected mainly. There is now more power in our I/O equipment, and a lot more flexibility compared to the bunch of hard-wired logic we used to have."

In Cupertino, California, Hewlett-Packard has its Silicon Valley production facility (CW, September 7, 1978) where circuitry for internal computer use are manufactured. Had the idea of producing a "home computer" for outside use been considered?

"Well, it's a possibility, but

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More than a Computer Company

OP SPOT

Everybody benefits from the open shop system

IT'S rather unusual for operations and programming staff to work in the same area, but they used to do so at an installation where I was once employed as an operator.

We ran an open shop system for development work. From the start of the day shift until about 4.30 pm, one of the systems was dedicated solely to testing.

The programmers were allowed into the printer room where they had access to card punch, card reader and VDU, so that they could feed their work to the system and monitor its progress.

It was up to the operators to take the

output from the printers, split it up and hand it to the programmers.

The system worked extremely well — there was little bickering between members of the two departments, and each gained from the presence of the other.

The programmers got a quick turn-around of work and were able to call upon the expertise of the senior operators when they came up against job control language problems.

We operators liked the set-up because we were able to prepare and run our own jobs, using the facilities present. Needless to say we weren't supposed to do so.

And when you work a 12-hour shift system, as we did at that particular installation, you tend to get a bit bored with each other's company. So talking to the programmers made a rather pleasant change.

As I have already mentioned, the open shop testing was scheduled to close at 4.30 pm every day in order to make way for live work. It was difficult to do this as there was one person who always insisted on having "one more shot."

Curiously enough, he was not a programmer but one of the members of a technical support group — a person who

had come up through operations and therefore could appreciate the need to keep to the work schedule.

A particularly niggly little character, he would complain constantly to the trustees about both print quality and the line-up of stationery. Until, that is, one of my colleagues had a quiet word with him, pointing out the error of his ways. After that, he was fine, no trouble.

Anyway, I would like to hear your views on communication between operators and programmers. What does each have to offer the other?

By Bernard Allen

Electronic mail surveillance warning

THE prospect of a severely regulated environment being over the future of electronic mail is getting increasingly serious, according to Russell Pipe, a US commentator on communications and law.

Speaking to an ISL conference, From Facilities to Electronic Mail, Pipe cited a large number of national governments that are considering control of information crossing their borders, for purposes of taxation and national sovereignty as well as privacy.

Many national authorities, Pipe said, are turning to a long-held principle of free open communication through the monitoring of electronic messages crossing frontiers.

This leads to much uncertainty about how electronic mail will develop, particularly in the minds of those in international companies who are thinking of introducing it to improve corporate communications.

Blocking of business information transferring even within a company is a "handy new practice", according to Pipe. He quoted Swedish leaders as saying "The critical mass Swedish political, economic, social data should not leave territory."

Countries are also considering imposing import duties based on the value of the content of information, rather than on the medium of transmission. This will entail government inspection of the content of international messages, even if internal messages contain and large, to be free scrutiny.

Another speaker at the conference, Clive Messer of Equipment, disclosed that electronic mail system running within the company since January, 1978 had increased users' productivity by about 35-45%, cut phone calls by 15% and inter-office memos by 25-30%.

The system has 725 users, runs on a single dial-up 1024 11/70 with standard DEC VAX. The software is Comet by Computer Corp of America, Cambridge, Mass.

HOW THE MINI CAN BENEFIT THE MAINFRAME SUPPLIER

A MAJOR mainframe vendor is motivated, as are most businesses, by the basic need to maintain and grow revenues and profits, says Honeywell's DAVID NORTON. He believes that in line with this fundamental objective, a vendor's principal concern will be to ensure that existing users do not leave the fold.

This is done by providing competitive products and services that meet the users' current requirements and continue to meet them as their needs evolve and change, as well as enticing users of competitive equipment into its ranks.

Against this backdrop, Norton discusses how minicomputers can play an important role in the mainframe suppliers' strategies emphasizing their role in distributed processing.

Norton is the marketing manager of Honeywell's minicomputer and terminals division.

Transaction processing is one of the requirements for a distributed system. Our photograph shows a transaction processing configuration based on a Level 8 mini using one of Honeywell's latest application packages, TP8-B.



Manufacturers' key to expanding markets

IN the industry some of the most overworked of buzz phrases are "distributed processing" and "distributed systems". Despite, or maybe as a result of this, distributed systems are a reality. The philosophy they represent is here to stay and offers the user real benefits.

Data processing has evolved from the early batch era to the

stage where a user demands, and is becoming accustomed to, immediate access to information and processing capability from his place of work.

Of course, meeting these demands is no problem for the mainframe supplier just increase the size of the central site and install a network of terminals.

There are drawbacks to this approach, however. Communications operating costs may be high, response times may not be all that is required, and central systems are complex to operate and maintain. But perhaps the most significant factor of all in the user's eyes is that he does not feel that he controls his computing needs.

This factor, the desire for autonomy, can be the prime justification for a distributed approach. Further support comes from the offsetting of the other centralised system disadvantages.

This trend towards other user groups, in an organisation having its own computers has been actively encouraged by the specialist minicomputer vendors.

They have come to appreciate the feeling of local independence from the central service organisation, the cost-effective business solution approach. The message is

reductive and the threat to the traditional mainframes' business significant.

Possessing a strong minicomputer product allows the mainframe supplier to respond to this challenge in kind, however.

Systems solutions can be offered using minis and mainframes combining the control of a centralised mainframe system and the effectiveness of the distributed approach.

For the mainframe to respond to the market today it is essential that he be able to provide the degree of distribution necessary for the user's style of operation, making the system fit the organisation rather than the reverse — and the minicomputer is the key to this capability.

Within such a mainframe-associated distributed system minicomputers will be found playing many roles: as a front-end communications processor, as a routine device in complex networks, supporting simple remote functions such as remote

job entry and distributed data entry, and as a comprehensive satellite processor providing local users with their own batch and transaction processing capabilities.

The supplier is also in a position to satisfy his user's standard systems needs with the advantages of a single source for supply and maintenance and inherent compatibility between mainframe and mini should it be required.

By the same token he can sell minis to users of competitive mainframe equipment.

The market for minicomputers is growing at about 30% per annum and, as such, represents the most rapidly expanding business area for the industry.

Where better for the established mainframe to look for increased revenues, the more so since some of the business undoubtedly will come from existing users and would otherwise possibly be lost to a minicomputer independent

Additionally, many of these prospective purchasers will already be users of competitive mainframe equipment.

Sales into this area, whilst useful in their own right, will represent an ideal vehicle for demonstrating the merits of dealing with a different company as a lead to bigger things!

For most mainframe suppliers a minicomputer provides the basis for extending the product offering into new areas, for example by the provision of office automation products, integrated with the information processing system and its associated networks.

The mainframe's mini appears within high volume output printing systems, as the "engine" within industry — specific terminals and application packages.

Competing within the fast evolving minicomputer market provides a technology spur having spin-off across the whole spectrum of a mainframe supplier's product.

Union asks for eye tests

THE National Union of Bank Employees has asked the National Westminster Bank to give regular eye tests to all its staff involved in the operation of visual display units.

NUBE made the request following reports that several of the bank's employees had experienced headaches and difficulty in reading newspaper after using the units.

Struggle for life of the BCS Specialist Group

THE operations specialist group of the British Computer Society is not dead, just dormant.

Despite the fact that the group has not met since last May, it is

still "very much alive", according to chairman Barry Patman.

An operations specialist with Infotech, he told me, "The reason we haven't been meeting is that we have had a lot of organisational type problems."

Since last May, several of the group's committee members have changed their jobs, and secretary Peter Davis has resigned.

Said Patman, "We have had a lot of trouble finding a replacement for Peter Davis. We are still looking."

They want someone who can give up a "considerable" amount of time to the work, is able to communicate with staff at all levels, and has access to secretarial facilities.

He continued, "A couple of our members have offered to take the job, but they both work outside London. Ideally, we

want someone near the Polytechnic of Central London, where we hold our meetings."

In his view, the group is important because it gives operations staff the chance to meet and discuss their work, and is "the only one" of its kind.

He continued, "In the course of my work, I get a lot of inquiries from staff who are interested in learning more about the group."

"We are looking to establish something which will represent operations staff of all levels. We don't want it to consist of managers only."

He is involved in the process of sending out a newsletter to members of the group to keep them informed about the situation and ask for their opinions on the subject matter of future meetings.

● Sadly, I must report that

Opcomm, the Coventry-based operations group, has finally folded up.

After a bright start in February last year, the group had difficulty in attracting new members and as a result lost its momentum.

Apparently, pressure of work and the demands of working shifts prevented many of its members from attending group meetings on a regular basis.

The group carried out a number of projects, including a survey, commissioned by Computer Weekly, into the computer room environment. That involved conducting over 40 installations in and around the Coventry area.

In addition, many of its members were deeply concerned about the lack of training available for many operators, and were involved in drawing up a report on the subject.

Operators often complain that nobody listens to their point of view. Well, Op Spot is listening and Bernard Allen would like to hear your opinions and ideas on all matters relating to computer operations.

Your letters should be sent to Op Spot, Computer Weekly, Dorset House, Stamford Street, London SE1 8LU. Telephone calls are equally welcome and Bernard can be contacted directly on 01-281 8035.

A routine for program library reorganisation

A DISC program library reorganisation package which in live operation has cut run time from 40 minutes to one minute, is being marketed by CHC Software of Reading. Called ZLIB, it is intended for use on ICL 1900s and on 2803/4, and 2850s, 60s and 70s running under DME.

Tony Etherington, operations manager at a Department of Health and Social Security site in London, told me, "As an operations manager at a 2803/4 site I was very interested in the claims made for this routine and so we took it on a trial basis. I

found it reduced our program library reorganisation time to one minute — it took 40 minutes using the standard ICL routine, XPEC."

According to Etherington, the routine also has a facility for permanently changing program priorities, which is especially useful for bootstrap loader routines.

He also says the listing produced by ZLIB is superior because it goes across the page and duplicate programs are highlighted.

UP goes the printer lid and paper spews out across the floor — it's a paper wreck. Not a pretty sight, particularly at the end of a long night-shift.

The unfortunate operator finding this unit must pick up the paper from the floor — folding it neatly, of course — sort out the inevitable mess at the back of the printer, re-align the stationery, and instruct the system to re-print the "lost" output.

Paper wrecks can be caused by faults in the device, or by poor operating such as setting the stacker incorrectly or failing to clear the output often enough.

But when two- or three-part listing is involved, wrecks may be the result of the paper coming apart, or de-leaving as it is known. When this happens, it tends to get caught up in the stacker rollers.

So each time you open a new box of stationery check that the paper is in good condition. If it is not, mark it as unusable and inform your operations manager or whoever is responsible for buying it.

Op Spot accused of bias

A NUMBER of you have said that this column tends to favour system. It's as simple as that. But I have nothing to say

Special travel arrangements to visit the Hanover Fair

IPC Electrical-Electronic Press Ltd., the world's largest publishers of computer, electrical and electronic journals, have made special arrangements for readers wishing to visit the Hanover Fair. The cost includes — travel by scheduled airline from

Hatfield to first-class hotel accommodation, departure transfer to the fair, and a return transfer to the airport. The program is subject to the following terms:

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Admission to this specialist exhibition, which is for all who make use of computers, costs Bfr.200 if you register at the door — but free pre-registration tickets will be sent if the coupon below reaches the organisers not later than April 6.

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What happens to workers in industries such as printing who are displaced by new technology? Following our reports on the technical side of the changes in US newspapers (CW, September 21, 1978), JAMES McDONALD, a printer who was made redundant and became a journalist, tells what happened to his colleagues.

Technology 'victims' turn disaster into a second chance

AN alarming notice greeted the composing room employees of a medium-sized daily newspaper in the eastern United States when they arrived for work one day.

Although not an ultimatum, the company informed the 220 employees that, because computerisation of the composing room, 75 jobs would be lost within eight months. The shock was traumatic. Many wondered who would be forced out. Others speculated on the difficulty of trying to live without a job. It was finally happening, the workers declared — everything the omniscient "they" had said would happen: computers were replacing workers, threatening to place them on public welfare.

After the initial shock, and when the dust had settled, a unique plan was unfolded.

The company was not simply firing the 75, but providing them with practical means for continuing as productive citizens. Since this was a union shop, dismissals were to be voluntary. Alternatively, the compositors with least seniority would be dismissed first.

However, the incentives offered by the publisher caused no problems in finding workers willing to terminate their employment.

The Providence, Rhode Island Journal-Bulletin was among the first American daily newspapers to make the switch from hot metal composition to the now-familiar cold-type process. During the transition period, less and less work was either available to, or required of, the compositors, whose jobs were gradually being eroded by computerisation.

In a manoeuvre which could well serve as a model for other employers considering the impact of mass layoffs, the Journal-Bulletin offered incentives which made the prospect of unemployment more palatable. Among the company offers were:

- Full-tuition scholarships to a four-year college or university anywhere in the continental United States, plus 200 dollars per week living expenses during that period;
- severance pay of 16,000 dollars;
- interest-free loans of 25,000

dollars for five years to anyone dealing to start his own business, plus the severance pay, and several additional offers incorporating some of the above combinations.

The company publishes two daily newspapers: the morning Journal and the evening Bulletin, each with five editions. On Saturday, both papers are combined and, on Sunday, the Providence Sunday Journal is published. With such a heavy production schedule, and despite the layoff of 75 compositors, it is not necessary to point out the effectiveness of computerised newspaper production.

From a layman's view, however, there appear to be some shortcomings in the system. Many readers complain of an inability to read the smaller sizes of type, a situation which, no doubt, will improve as further camera or printing refinements are developed.

Another problem occurs when paste-up artwork sometimes "slips" out of position and overprints in the wrong place on the page.

Despite these minor faults,

management is apparently convinced that cold-type production is here to stay, and continues to nibble away at the remaining jobs in the composing room.

Since the original 75 compositors voluntarily terminated their employment, the company offered retraining in other departments to several other compositors. After 22 years as a compositor, I accepted an offer to be retrained as a staff writer, along with five of my co-workers, in 1977. That same year, six more were transformed into advertising salesmen. An informal survey shows that we are all highly satisfied with our mid-life career changes.

But what about the original 75 who left the company under pressure of computerisation?

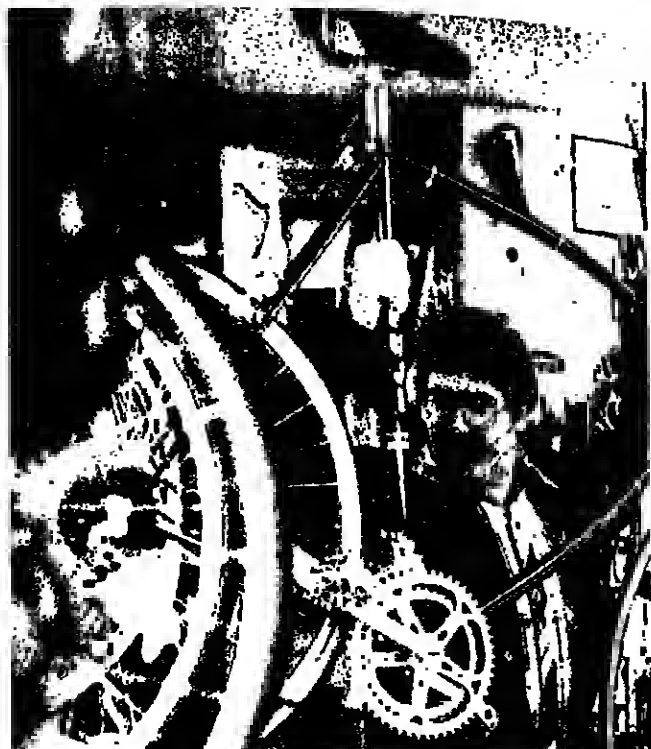
A representative sampling lends even the most casual observer to conclude that here, indeed, is a happy group of men.

Donald Miller always had an urge to fly a plane, so he enrolled in flying school at a local airport. At the same time, he operated his own small job printing business in the garage attached to his home. When he tires of the smell of ink or the monotonous clatter of the printing press, he thinks nothing of taking his wife along for the ride whenever a paying customer wants to be flown to a destination.

John Prancunas and Joseph Lavery decided to become car mechanics and enrolled in a trade school for that purpose.

Three of the younger ex-compositors took advantage of college scholarships. Roger Guevremont chose a business collage curriculum, while Ronald Jeffreya aimed at a career in real estate. The third member of the trio, Robert Barker, already possessed a university degree in finance. He returned to college in pursuit of another degree in the field of agricultural management, after which he will combine his education with a love for farming, pursuing a career devoted to efficient food production.

At the opposite end of the age spectrum, 52-year-old John Choquette chose early retirement. While supporting himself on a partial company pension, John manages a mobile home trailer park near the popular



TAKING A NEW ROAD... Former compositor Andy Jennings now works a bicycle shop.

seashore resort town of Narragansett, Rhode Island.

When he reaches normal retirement age, Choquette will receive full company pension under the terms of his employment termination. In his spare time, he has developed an interest in furniture refinishing.

Among other things, 36-year-old Andy Jennings is keenly interested in physical fitness. This enterprising former compositor has combined his acquired management talent with a love for bicycling into a successful business which he named "D. J. Handlebars." Along with his wife and children (during school vacation periods and whenever they feel like it), Andy sells and services 10-speed bicycles.

The most common remark to be heard among these and other former compositors goes like this: "It's like being reborn. If it were not for computers, I'd still be facing the daily drudgery of punching a time clock and waiting for the whistle to blow before starting and stopping work."

Admittedly, without the incentives offered by their employer, the present status of these former compositors probably would have been very different.

The fact remains that the sometimes traumatic result of industrial application of computers can be softened when such use is balanced against the socio-economic effect on the working man. Present worldwide inflation is often attributed to greed among many segments of the business community, from producer to consumer. On the other hand, it is easy to blame computers for high unemployment levels.

The reactions of these and other workers show that while computers may be capable of eliminating some jobs and creating new ones, the blame more properly lies with uncaring or thoughtless companies which ignore their social responsibilities.

Not only that, but I've discovered mid-life career change to be a powerful source of satisfaction — not the formidable opponent I once believed it to be.

My personal experience demonstrates the dramatic effect which computers have had on my life. When I was first laid off on a tour of a composing room in my college days, it was a case of love at first sight, causing me to abandon my planned future as a writer and to become a compositor instead.

The apprenticeship lasted six years, followed by journeyman status which, I thought, placed me among the elite of skilled craftsmen. The creativity and artistry of quality typography quickly buried any previous desire for writing — until college arrived on the scene. Most metal printers claim that creative typography has deteriorated as a direct result of computerised newspaper production.

Although I agree with this consensus, it required a great deal of effort to overcome a fear of leaving a secure, well-paying job for an uncertain future in a new occupation, especially at the age of 45. As my middle-aged man will attest, employers are reluctant to hire those who have reached that age group.

My employer remained the same, and I was allotted a one-year probationary period to test my writing ability. During that time, nagging doubts about this ability persisted, almost to the point of intolerance.

I became a regular staff writer, currently employed in a regional office maintained by the Journal-Bulletin.

Ironically, I've discovered that my life has returned full circle to that point, almost 30 years ago, when the "writing bug" took its first bite into my fingers. I still concur with my former fellow compositors: It is like being reborn.

Not only that, but I've discovered mid-life career change to be a powerful source of satisfaction — not the formidable opponent I once believed it to be.

Using CAD to develop better and better bottles

UNITED Glass, one of the world's leading glass container manufacturers, producing more than 40 million bottles per week, uses computers extensively in the design of its bottles and mould equipment. Developed over the last eight years, the UG software has been adopted by Owens-Illinois, said to be the world's largest packaging manufacturer, and a 50% shareholder in UG.

Interest in the use of computers to assist its designers began in 1971 when Frank Page,

manager of the Glass Container Division's design department looked at the potential for computer aid.

UG decided to develop its own programs to assist in the technical groundwork and other calculations necessary for bottle design, mould manufacture and bottle making.

The first stage in CAD development was the writing of a program for calculating volume displacement of round bottles. The displacement of any bottle must correspond exactly to its predetermined brimful capacity plus the preselected volume of glass necessary to ensure sufficient strength. In many bottle types, such as whisky or milk bottles, the displacement must be guaranteed to the customer. The designers nominate dimensions which can be automatically changed to meet the required displacement.

The final dimension is output on the teletype ready for the designer to add to his drawing, also providing information in tabular form for production of a numerical control tape. The tabulated output is used by Johnson-Radley, UG's mould-making associates for the production of NC tapes for automatic mould cavity machining.

This program is still in use today, though calculation of the volume now takes less than a second with data preparation taking about another 10 minutes.

In 1974, a program was written for handling irregularly shaped containers and two years later UG began using a program developed in the US by Owens-Illinois. This program handles all mould equipment calculations and also takes into account the parameters of the glass machine

settings such as the speed of the machine, temperature and glass viscosity, and provides the glass distribution which will be obtained when a bottle is actually made.

Now UG's computer system integrates programs stored both at St Albans and in the US. The St Albans terminal uses a keyboard and VDU with satellite links to the US. Most of the design work is done in-house on a Prime 300.

On a new press and blow bottle and mould design, a designer would first prepare a tape with information on the basic shape of a container, the type of machine, glass density and gob temperature, bottle making machine speed and other information.

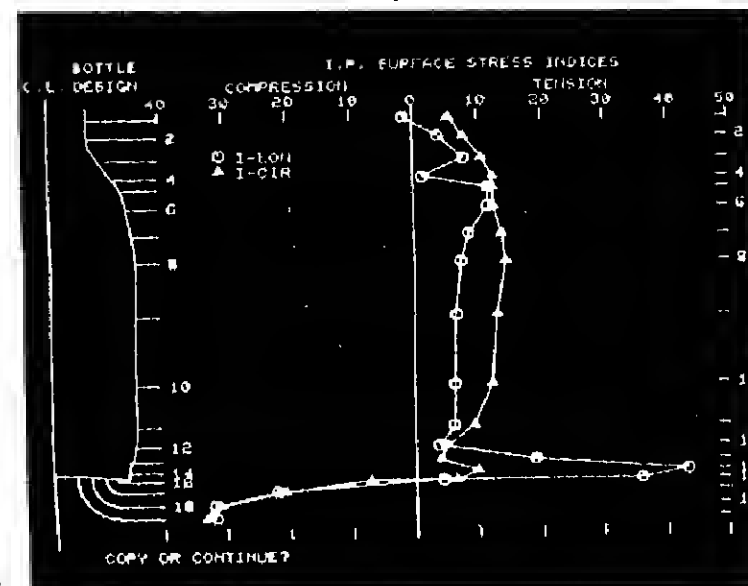
The company has built up a library of about 1,000 mould shapes and can now draw moulds complete with cavities.

An image of the proposed container and mould equipment

is then drawn on the screen, showing basic mould shapes which satisfy the information which has been given. The designer can then change the design on-screen and, when he feels satisfied with it, display the glass distribution, which will be obtained during manufacture.

If the designer is not happy with this, he can then change any of the parameters, such as gob temperature or machine speed, and the program will calculate the effect of these changes. If the result is satisfactory, hard copies can be obtained of the results. The Benson 2222 plotter provides the designer with working drawings of the bottle.

"We now have complete computer assistance at every stage of design," says Frank Page, "and the integration of our own and O-I's work has been a major example of what can be achieved by the affiliation of two leading bottle makers."



Graphically checking the cross-sections of non-round bottle designs to ensure the shape meets the specification.

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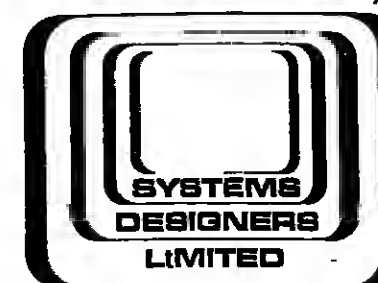
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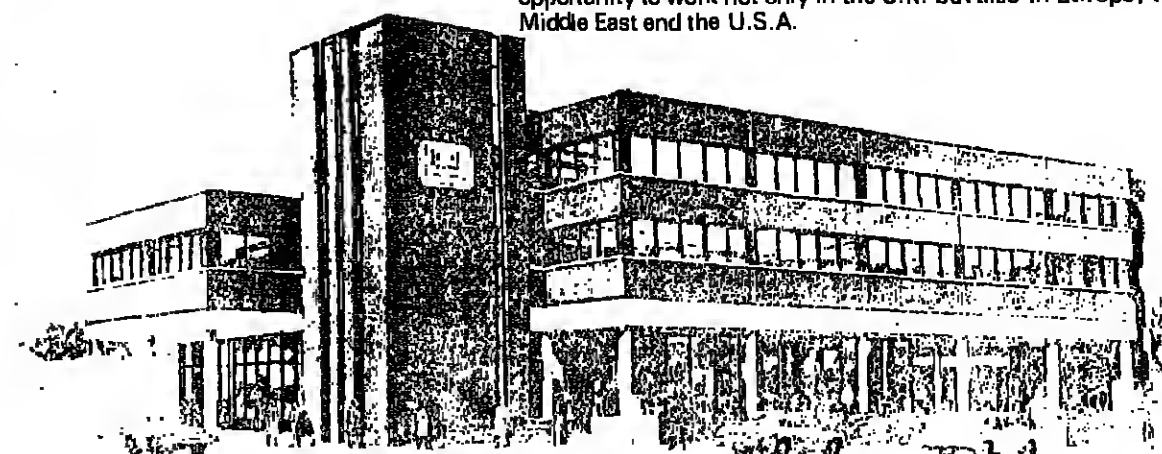
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Process control and monitoring, plant control simulation, high speed data analysis and distributed micro-processor system.

MILITARY
Modelling, avionics and Radar systems, complex rigs, simulators and microprocessor missile systems.

SOFTWARE PRODUCTS
Compiler technology, software design techniques, MASCO and information processing systems, STATUS and VIEWDATA systems.

CONSULTANCY
Complex military systems, software and systems development technology. Salary is negotiable up to £10,500 p.a. according to ability and experience.

The company offers productivity bonus, insurance and pension schemes and assists with relocation if required.

If you cannot make it to the Britannia Hotel telephone Ann Gregory on Camberley (0276) 82244, or write to Bill Hickey, our Operations Director at: -
Systems Designers Limited
Systems House
1 Pembroke Broadway
Camberley
Surrey GU15 3XH

An Invitation to All -

GROCKLE* PROGRAMMERS

Come and join our growing systems development team in Bournemouth.

You'll be involved straightaway in the development of our Data Base project, working initially towards the introduction of System 38 + VDU's in 1980. Having learnt about us and RPG III, you'll work closely with other team members and user departments.

SENIOR PROGRAMMERS

Two years experience minimum - Team project experience - Ability to participate in system design.

PROGRAMMERS

One year's experience minimum - Lots to learn ahead in pleasant, informal work environment.

JUNIOR PROGRAMMERS

First opportunity to make progress. Full training provided. RPG II experience desirable in each case, but not essential.

We'll pay you a competitive salary with good fringe benefits, and you'll work in pleasant modern surroundings close to the town centre and about two minutes walk from the sea front. The New Forest and Purbeck are within easy reach.

*GROCKLE - not an obscure language, but a local term of friendly abuse for "outsiders", particularly those who drive Morris Minors!

Please contact:
Mrs. H. M. White
Personnel Manager
TEACHERS' ASSURANCE
Teachers' Assurance House
12 Christchurch Road
Bournemouth BH1 3LW
(Telephone: Bournemouth (0202) 291111)

TEACHERS'
ASSURANCE

THE VICTORY INSURANCE COMPANY LIMITED COBOL PROGRAMMERS

We are specialist International Risers and are among the leaders in our field. The Company's Chief Administration Office is based in Folkestone, an attractive town situated on the South East coast of Kent, where we offer challenging opportunities for Programmers in relation to a Data 100 system linked to IBM 370/145 and 158 computers. Just consider the following ...

ARE YOU

- * Keen to develop and gain absolute job satisfaction?
- * Self-motivated and forward thinking?
- * Aged 23 - 35?
- * Keen to join a progressive team to develop a new Data Based system?

DO YOU

- * HAVE A SOUND KNOWLEDGE OF COBOL?

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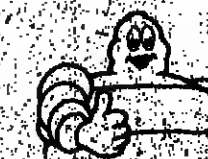
If you feel that you meet our requirements, we want to hear from you. Please write in confidence, giving a brief account of your achievements to date to:

Assistant Staff Manager
The Victory Insurance Company Limited
Victory House, Castle Hill Avenue,
Folkestone, Kent CT20 2TF



Systems Designers

Here's a top opportunity to use your solid experience in programming batch and real-time on the development of computer equipment in systems design with the world's most advanced real-time manufacturers. Ideally you should also be interested in training young programmers. Send for our information facts pack today by telephoning Snake-on-Trent 48101 ext. 173 or writing to John Sellers, Michelin Tyre Company Limited, Snake-on-Trent ST4 4B.



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Snake-on-Trent

WELLORAX

IBM BUREAU + FACILITIES MANAGEMENT OPPORTUNITIES

We are a rapidly developing service company specialising in the Bureau or Facilities Management operation of many commercial Customers. We specialise in IBM hardware using RPGII on the 10 System/3, System/32 and System/34 computers which are currently run. We offer excellent prospects experienced, service-oriented people, amongst which are plans for the installation of two large System/38 configurations over the next 18 months.

BUREAU SYSTEMS & STANDARDS MANAGER:

Based in Kingston with experience of managing a number of programmers, preferably in a bureau environment. Must have a track-record of success and be very practically user oriented in systems analysis and RPGII programming. Will report to Production Director. Salary: £7,500-£8,500 according to experience, plus company car.

F.M. ANALYSIS & PROGRAMMING CONTROLLER:

Based in Kingston but with clientele ranging over Greater London. Must have proven successful track-record of analysis, RPGII programming and self-motivation. Prospects of rapid promotion and objectives are met. Salary £7,500-£8,500 according to experience, plus company car.

F.M. PROGRAMMER/INSTALLATION CONTROLLER

Based in Kingston on System/34 with interesting development potential. Considerable independence in friendly host company. Salary £4,500-£6,000 depending on experience plus company car after 12 months.

F.M. PROGRAMMER/INSTALLATION CONTROLLER:

Similar to above. Salary £4,500-£6,000 according to experience, plus company car after 12 months.

F.M. ROVING SUPPORT OPERATOR:

To cover our nine locations and occasional external work. Must have keyboard facility and at least one year's experience on IBM System/3, /32, or /34. Salary £3,500-£4,500 + car.

BUREAU SENIOR ANALYST/PROGRAMMER:

Based at Kingston with interesting range of existing applications and prospective developments, including conversion to System/38. Minimum experience three years' RPGII and varied. Salary £7,500 plus company car after qualifying period.

3741 DATA PREPARATION OPERATORS:

Based in a friendly atmosphere at Kingston. IBM experience desirable but not essential. Salary basic £3,400 + very noticeable monthly bonus after two months' probationary period.

Please write with brief career details to: Wellorax Limited, 12 Canbury Passage, Richmond Road, Kingston-upon-Thames, Surrey.

As a rapidly expanding service organisation specialising in the development and installation of systems for small business computers such as the IBM 6110, System/34 and System/38, we need to increase our existing teams.

MINI SYSTEMS GROUP

SALES EXECUTIVE:

We have had such a high level of success in marketing our business packages for the IBM 6110 that we now need another SALES EXECUTIVE to help consolidate our position in this field. A knowledge of small business systems is preferred, although extensive training will be given to the successful candidate.

In addition to selling systems for the 6110 he or she will be expected to contribute to our planned expansion into other machines and markets.

This is a significant career opportunity for the right person, offering a chance to join one of the few companies properly prepared to take full advantage of the coming increase in the small business system area.

Although based in Kingston, the position requires a high degree of mobility and therefore a COMPANY CAR is provided.

The anticipated remuneration package is £10,000, although there is no upper limit.

PROJECT LEADER:

Based in London. A knowledge of BASIC is essential. Systems Analysis and design experience with first time users preferable.

Salary circa £7,000.

RPG SYSTEMS GROUP

PROJECT LEADER:

Based in London. Detailed knowledge of commercial computer systems, systems analysis and design, with a minimum of five years' experience at least two of which must have been in programming.

Salary circa £7,000.

ANALYST/PROGRAMMERS:

Based in London and Birmingham. Must be capable of working as part of a team designing and installing systems for our many customers.

Salary range £5,000-£6,500.

All positions offer a Company Car upon completion of qualifying period plus many other benefits.

Call TERRY WRIGHT on 01-549 8830 now to arrange an interview or write to him at:

Eurologic Software Ltd. 12 Canbury Passage, Richmond Road, Kingston-upon-Thames, Surrey

Software Engineers & Programmers

HOW DO YOU VIEW YOUR FUTURE

South Coast

Our Client, one of the leaders in the field of Computer Controlled Traffic and Telex switching systems are looking for Software Engineers and Programmers with experience in one of the following:- DEC, PDP11, Central processors, Coral, Macro and real-time programming. If you have the relevant experience and would like to be an important member of a small team working on Research and Development, why not ring me, John Davey on 01-581 1830 or 01-584 8476, or write quoting reference No. AWS.



Thurloe Executive

30 Thurloe Place, London SW7 2HQ
Telephone 01-884 8476
consultants nationwide

Computer Systems Manager AMSTERDAM

A major financial services organisation seeks an experienced Computer Systems Manager for its new Customer Services Group in Amsterdam.

You will be responsible for providing a range of computing services for this rapidly expanding Group, personally undertaking all systems analysis and programming carried out internally, and making use of external software services when appropriate.

You must either have managed a small ED.P. unit yourself or now be ready to do so. You should have 2 to 3 years programming and systems analysis experience with a knowledge of ANS COBOL and RPGII. Hardware should include S32/S34 and IBM

370/158. A proven ability to learn languages is desirable.

The successful candidate is offered a five figure salary and first class conditions of employment. Career prospects are outstanding both as the scope of this position expands rapidly, and elsewhere within the organisation.

Please reply to Richard Varcoe, quoting Ref. No. 139, showing how you meet the above job specification and including details of your career to date.

Lee Jensen Recruitment Ltd., 5 Lower Temple Street, Birmingham B2 4JD. Meritpower Consultants, Birmingham, London, Amsterdam.

Young Programmers

a challenging career awaits you in

Management Consultancy

up to
£5750

First Class training
Excellent prospects

City based
World wide travel

The field of management consultancy offers the rare opportunity to gain exposure to varied problems and techniques on an international basis, while developing the skill in business practice essential for the step into company management.

Our clients are one of the world's foremost international management consultancies — part of a famous firm of chartered accountants, with some 350 offices in 90 countries, they have successfully undertaken many prestigious assignments in the UK and overseas developing systems using the most up-to-date data processing techniques covering a variety of applications for clients in Government, Industry and Commerce.

The Systems Development Group provides a DP consultancy service for the Company's clients throughout the world. As a programmer within the Group, you will gain experience on varied assignments involving:

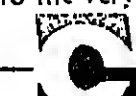
- The design, development and implementation of complex systems;
- Computer policy planning, equipment selection and installation;
- Feasibility studies and computer efficiency reviews;
- DP organisational studies and procedures development.

Ideally you will possess a sound academic background (preferably degree level) and will have gained 1-3 years experience of commercial programming on mainframes or mini-computers. Strength of personality and communication ability will be important factors.

1979 Graduates Our clients also wish to appoint a number of graduate trainees later this year; you should be in the final year of a computer-related degree course and possess the strength of character needed to gain maximum benefit from intensive training and early responsibility.

Future prospects are excellent — assisted by the company's own in-depth training, and external courses, you will be expected to progress rapidly into senior DP consultancy positions, with opportunities to diversify into other fields of business.

If you are seeking a career path to the very top, contact Barry Latchford, quoting ref. BL 2018.



Lloyd Chapman Associates

123, New Bond Street London W1Y0HR 01-408 1670

A move to Personnel

for a young DP Specialist
attracted by Recruitment and Personnel Development
London W.6., c. £6,500

A major British group, turnover £800m, has recently formed a Management systems Department incorporating its DP, O & M and Communications function. A DP specialist is required who will be trained in staff selection and career development techniques and take responsibility for providing these

services within the department. Candidates, aged 24+, will have a background in systems analysis, programming or operations and ideally be familiar with both main frame and mini computers. Some experience in staff selection or supervision would be useful but aptitude and potential are the essential requirements.

E. Sutton, Ref: 17067/CW.

Male or female candidates should telephone in confidence for a Personal History Form to: LONDON: 01-734 6852, Sutherland House, 516 Argyle Street, W1E 6EZ.



Hoggett Bowers
Executive Selection Consultants

BIRMINGHAM, CARDIFF, GLASGOW, LEEDS, LONDON, MANCHESTER, NEWCASTLE and SHEFFIELD.

THE UNIVERSITY OF LANCASTER
DEPARTMENT OF COMPUTER STUDIES
LECTURER
Applications are invited for the post of Lecturer in the Department of Computer Studies. The successful candidate will be given a three year contract with a salary of £10,000 per annum. Further particulars and an application form may be obtained from the Department of Computer Studies, The University of Lancaster, Bailrigg, Lancaster LA1 4YW. Tel: 0524 7341. Closing date: 15th May 1979.

PROGRAMMERS & OPERATORS
FREE LIST of vacancies in your area
ALL AREAS
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Permanent Operators
IBM 370/155 DOS
Operator required for a city based, steady 8 hrs. day. £500-£600 p.w.
Tel: 19027/2880 George IV + Men
2 Reader Op. Min. 2 yrs exp. either VME or 2800 or 1200 Series Op.
£4000-£5500 + 20% p.w.
Tel: 2904
Operator required. Very interesting, 12 mths. exp. on ICL 2800 or 1200 Series Op.
Call Sally or Elaine on 01-49 14700

The University
of Leeds

SYSTEMS ANALYST

Applications are invited for the post of Systems Analyst in the Registry of the University. The Administrative Computer Unit provides a general Data Processing Service to most administrative areas in the University.

There exists a wide variety of well-established batch systems and it is now intended to develop, on a machine to replace the existing ICL 1901T, new interactive on-line systems and to review, in depth, the nature of the present batch work. This development, on behalf of the Registrar, Librarian and Registrar, will be a challenge and an additional systems analyst is now needed to help meet this challenge.

The successful candidate will play a major part in the detailed design, program specification and implementation of financial and non-financial systems.

Candidates should have a sound knowledge of COBOL and a good background in ICL hardware and software. On-line experience and a degree and/or other relevant qualification would be an advantage.

Starting salary at an appropriate point on the IA scale for Administrative Staff £3,364-£5,653 (under review), according to age, qualifications and experience.

Further details of the post may be obtained from the Registrar, The University of Leeds, Leeds LS2 9JT, quoting reference number 119/17/AZ. Closing date for applications 27th April, 1979.

Systems Programming International Banking Croydon

Bank of America, the world's largest international bank, is seeking a small number of experienced professionals to augment its European Systems Department based near Croydon.

We operate an IBM 360/65 System utilizing OS/MFT Operating Systems and have Honeywell H-36 mini-computer systems in branches throughout Europe, Middle East and Africa.

SYSTEMS PROGRAMMERS - Successful candidates will be responsible for data communications and operating systems implementation for the IBM 360/65 and for a variety of mini-computer equipment, and will participate in future systems selection. Applicants should have at least three years data communications programming experience covering IBM 360/370 at the BITAM level. Experience with mini-computer data communications is highly desirable.

PROGRAMMER/ANALYSTS - Successful candidates will develop, maintain and support banking systems run on Honeywell mini-computers. Applicants should have three years programming experience, preferably with knowledge of Fortran, Banking/Accounting experience would be an advantage, as would demonstrated ability to handle user relationships in Europe.

For both positions, occasional travel of short duration in Europe is involved. Excellent career prospects exist within the Bank's international operations. Salaries will reflect experience and qualifications, and other benefits are in line with best banking practice, including non-contributory pension and favourable loan facilities.

Please write in strictest confidence with full personnel, salary and career details to:

G L Hope, Bank of America NT & SA, Personnel Planning and Recruitment, 25 Cannon Street, London EC4P 4HN.

BA BANK OF AMERICA

Data Preparation Manager

£6847 - £7654

This is an important managerial position within the Central Computer Service of the Greater London Council based at County Hall, near Waterloo Station.

The post involves responsibility for the work of a large Data Preparation section with a staff of 74. An evening shift is also worked with a staff of 12.

The ideal candidate will be of proven managerial ability and have experience of large key-to-disk systems (currently there are 3 x ICL Key edit 100 clusters in separate rooms). He/she will be accustomed to organising the production on time of a very large volume of encoding handled daily.

Benefits include

Over 5 weeks leave a year
plus 1 extra day off per month
flexible working hours
interest-free season ticket loans after 1 year
comprehensive sports and social facilities
restaurants and bars
ideal location - close to transport services and South Bank Arts Centre

For further details and an application form contact Paul Hildreth (01-639 3035) or write to Central Computer Service, Greater London Council, Room 296, County Hall, London SE1 7PB. The closing date for applications is 4 May.

GLC Central
Computer Service

Systems Analysts Head Office Edinburgh

We are a major national Group in the brewing and leisure industry with significant interests ranging through Ale and Lager Production, a large Free Trade sales operation, Wines and Spirits, Inns and Hotels, from which we derived a turnover of £390m in 1977/78.

Our Information Services organisation provides a wide range of advanced systems in the Group's operating companies throughout the United Kingdom. These systems run on a 7 megabyte IBM 370/158 with Attached Processor under MVS. A large part of our processing is on-line, with CICS/VS, IMS/VS and VSPC controlling communications and providing database and timesharing facilities.

Additional Systems Analysts are now required to contribute to the implementation of a significant systems development programme covering all aspects of our businesses. Experience of developing on-line and database systems in a CICS or IMS environment is preferred, although training will be given to exceptional candidates who lack these skills. Previous experience in the brewing or hotel industries or a related consumer business will be valued highly.

Open to candidates of either sex, these posts represent attractive career development opportunities to highly motivated individuals ready to realise their potential.

Complementary to competitive salaries, a generous fringe benefits package features non-contributory Life Assurance and Pension schemes and relocation assistance where appropriate.

You are invited to either telephone or write for an application questionnaire to I. M. Gilchrist, Recruitment Manager, Scottish & Newcastle Breweries Limited, Head Office, 111 Holyrood Road, Edinburgh EH8 8YS. Telephone 031-556 2591 extension 464.



Scottish & Newcastle Breweries Limited

University of Birmingham

THE COMPUTER CENTRE

The Centre already provides a wide range of local and remote computing facilities in the University. These are now being further extended by the installation of a DEC 2050 minicomputer system for both local and remote use and by the development of an on-line network which will have links to the Major Universities Computing Network. To help support these expanded services applications are invited from graduates for the following posts:

COMPUTER OFFICER Operations Group

In assist with the management of the DEC 2050 installation, to provide technical knowledge and software support in the area of telecommunications and control environment in the selection, design and construction of specialised hardware. Candidates should have management ability and several years' previous experience in the design of digital or telecommunications systems.

SENIOR HARDWARE ENGINEER Operations Group

to be responsible for the day-to-day running of the technical workshop and the maintenance and replacement of equipment associated with the network.

Candidates should have practical experience of telecommunications within a computer environment.

COMPUTER OFFICER User Services Group

to participate in the work of the Group which is responsible for writing and supporting application packages and providing advice, instruction and documentation on the use of the Centre's facilities. Candidates should be sympathetic to the needs of users and preferably have experience in

statistical data processing

ADVISER FOR INTERACTIVE COMPUTING This new Computer Officer post has been created in the User Services Group to develop the practical application of CAI and CAL techniques.

The post is tenable for two years' secondment would be welcome. Candidates should have computing and experience especially in the areas of graphics, display, modelling techniques using on-line graphical displays. For the Computer Officer posts, a higher degree is desirable but in all cases clear evidence of previous work successfully completed is essential. Starting salary for Computer Officers, according to age, qualifications and experience, will be on the scale £3,354-£5,804 (part) - £5,855 (under review) and for the Senior Hardware Engineer on the other Related 1A scale £3,583-£5,855 (under review).

Further particulars are available from the Applicant Registrar, Science and Engineering, University of Birmingham, P.O. Box 363, Birmingham B15 2TT. Those whom applications are invited to apply should send three copies, including full curriculum vitae and naming three referees, should be sent by Wednesday, 2nd May 1979. Please quote ref. 253.



An opportunity to join a young, energetic and forward thinking team of engineers at the Digital Technology Centre of Plessey Communications & Data Systems Limited, Lenton, Nottingham.

Mini & Micro Processor Software Engineers

- preferably with a degree or equivalent in Computer Science/Engineering/Maths/Physics. Experience in assembler programming would be an advantage.

There are also some opportunities for

Fortran Programmers

- preferably with a science degree or equivalent. Some knowledge of Data General systems would be useful but not essential.

Competitive salaries will be negotiated on the basis of experience and qualifications. Large company benefits include generous help with relocation expenses.

We're around three miles from the centre of Nottingham - enjoying all the amenities of a big city and attractive countryside.

The area offers a wide range of reasonably priced housing - plus first class road/rail links to London and the North.

Join us now...

Contact Roger Andrews, Software Engineering Manager, on Nottingham (0602) 866522 Ext 201 between 10am - 5pm. Please reverse charges. Alternatively, write to him at Digital Technology Centre, Plessey Communications & Data Systems Limited, Abbeyfield Road, Lenton, Nottingham NG7 2SZ.

PLESSEY

Principal Computer Operator

Philips Research Laboratories require an experienced Operator to join a small team in the Computer Department.

The Department runs a computing service for scientists and engineers involved in many varied areas of research. It is based on two ICL 1904S processors, using a special version of George III which allows both to access the same file store. A DEC CO 1503 front end connects 38 terminals. Later in 1979 an SEL 32 computer system will be installed to do CAD of integrated circuits.

The person chosen will be involved in all usual aspects of operating, and will also be required to assist and deputise for the Chief

Computer Operator in organisational and technical matters. Consequently, several years' 1900 and George III experience are essential together with a technical knowledge of communications equipment. The ability and flexibility to learn about new systems is also needed.

A five-day week is worked, normally 9.30 a.m. to 4.30 p.m. with shift hours (5 times in two weeks) from 2.00 p.m. to 10.00 p.m.

Please apply to: Mr M. L. Maisey, Philips Research Laboratories, Cross Oak Lane, Salford, Redhill, Surrey. Telephone: Horley 8844.



Research
Laboratories

PHILIPS

COUNTY OF SOUTH GLAMORGAN ENVIRONMENT AND PLANNING DEPARTMENT SENIOR ASSISTANT ENGINEER

SO/PO1(1) £2232-£3342 p.a.
Inclusive of salary supplement

The duties of this post in the Research Development Group of the County Surveyors' Division at the County Headquarters will include the use of I.C.L. computers in engineering applications (mainly Highway, Traffic and Structures). Between May 1978 and January 1981, work will be transferred from the I.C.L. 1904S computer to the new I.C.L. 2978. Graph plotting and online terminal facilities are available, most programs being written in FORTRAN and run under the George III or VME/8 operating systems. The work consists mainly of the development and implementation of new program units and the maintenance, enhancement and transfer of existing ones to the new computer.

Applicants should have experience in computer programming and must be chartered Civil Engineers.

A contribution of up to £500 for removal and associated expenses will be considered in appropriate cases.
Applications from the Personnel Officer, Fleet St, Cardiff, South Wales, CF1 1AP, Tel: 0222 444411, ext. 2411/2. Closing date 30th April 1979. (Ref: 2535)

A happy Easter to all our clients and Operators. We're busy hatching some new contracts in the U.K. and Overseas.

For exact details see next week's "Top Ops" page in Computer Weekly or telephone 01-491 4706.

Knight

Staff Services Division of BOC Datacube and a member of Computer Services Association.

CMG
London - Amsterdam - Frankfurt
Rotterdam - Brussels - Glasgow

Computing
Services
Association

Consultants Analysts Programmers

Enjoy variety of work
plus probably the best benefits
package in the industry

The recent Jordan Survey on Britain's Top 500 Electronic Companies showed that CMG COMPUTER MANAGEMENT GROUP is the highest payer in the computer industry (front page Computer Weekly, 1st February, 1979) - but the benefits of working for CMG go much further than that.

CMG is now the largest independent computer services bureau in Europe. Privately owned by the employees, its unique style of management, and employee participation has generated vigorous growth which has tripled annual turnover to £12 millions in the last four years. It goes without saying that in this environment there are ample opportunities for career advancement.

We are seeking systems people for a variety of work solving commercial business problems using minis, mainframes and terminals, from programming to consultancy. You will need a minimum of 2 years experience in commercial systems and programming.

Salaries: £5,000 - £13,000 P.A.

Plus:

- Profit share up to 10% of salary
- Non-contributory pension
- Free Life Assurance
- BUPA Family Cover
- 21-26 days annual holiday
- Assistance with removal expenses.

Locations: London, City, Greenford, Croydon, Glasgow.

Please contact Caroline Connabier quoting reference no. CMG014.



Technical Support People Ltd.
Victory House, 99 Regent Street,
London W1R 7HB
Telephone: 01-734 9776

Computer Operator Ford Motor Company - Langley

The Truck division at Langley currently operates a Burroughs 2700 machine under MCPV basically on batch processing but can cover some communications support. We will be upgrading our machine to the new 2815 model in the near future to give us a configuration of 120 MB of disc, 2 x 80 K.B. tape units, 1100 L.P.M. printer and 280 K.B. of core. Future applications will consider on-line direct entry stations within the plant and remote processing to an IBM mainframe at the company's headquarters at Warley, Essex.

A Data 100, model 70, is also on site. Shift working is essential and is

reflected in the salary offered of up to £5,500. Opportunities for advancement are considerable within the company's growing Data Processing organisation. Ideally the prospective candidate should have had Burroughs Medium System operating experience for a minimum of one year. Normal large company benefits are in existence including an attractive car purchase scheme.

If you think you would like to join a growing team, please write to Joe Vickers, Room 37/110A, Ford Motor Company Limited, Sutton Lane, Langley, Berkshire.



Ford

THE POLYTECHNIC, WOLVERHAMPTON

The Polytechnic is establishing a Computer Centre to be responsible for computing facilities and services. A large dual PRIME 800 interactive system supporting initially 84 terminals and a batch load will replace the existing ICL 1904S service in mid 1978. Additional computer staff are required and applications are invited for the post of:

SENIOR ANALYST/PROGRAMMER (Remuneration £3,800-£5,800)

To be responsible for the scientific and engineering areas of Computer Centre activity. Candidates should have several years' experience in design and co-ordinate small project teams.

SENIOR ANALYST/PROGRAMMER (Remuneration £2,232-£3,600)

To be responsible for the commercial/administrative areas of Computer Centre activity. Candidates should have several years' experience in design and co-ordinate small project teams.

PROGRAMMERS

Applicants should have a sound computing background and experience in the development of systems programming. For details and application forms, please write to the Polytechnic, Wolverhampton WV1 1LT.

UNIVERSITY OF KEELE

SYSTEMS PROGRAMMER in Computer Centre

Applications invited for a Systems Programmer to the Computer Centre. The University's computing service is based on a DEC 1090 minicomputer system and a DEC 1090 minicomputer system. The Centre has a wide range of facilities including a large number of terminals and a large number of programs. The Centre has a wide range of facilities including a large number of terminals and a large number of programs.

For details and application forms, please write to the University of Keele, Keele, Staffordshire ST5 5BG.

oxford polytechnic

Department of Mathematics Statistics and Computing Senior Lecturer or Lecturer II in Data Processing

A vacancy exists for a person to teach Data Processing on HNC, HND Computer Studies courses and on the Modular degree course. An interest in Data Base, Communications, Networks or Distributed Processing are would be an advantage. Candidates should have a higher degree and relevant industrial/commercial and teaching experience.

Department of Management and Business Studies Senior Lecturer or Lecturer II in Data Processing

(Temporary appointment for one year)
To be responsible for teaching this subject to Degree and Diploma courses.
Salary: Senior Lecturer £8,094-£7,008 (per) — £7,572
Lecturer II £4,101-£6,588
Under review from 1 April 1979
Transfer from Lecturer II to Senior Lecturer is, subject to efficiency requirements, automatic.
Applications, including a curriculum vitae and the names of three referees, should be sent by 15 May 1979, to the appropriate Head of Department, Oxford Polytechnic, Oxford OX3 0BP, from whom further particulars and application forms may be obtained.

The POLYTECHNIC WOLVERHAMPTON

Computer Centre

The ability to lead and innovate?

We require a Head of Department for our new Computer Centre with the ability to lead and innovate. This opportunity is a result of the installation of one of the most advanced computing systems in a Polytechnic.
Applicants should have a substantial computing experience in Education/Industry/Commerce.
Salary within a range of £6,000 - £9,000 (Barnham Grade 5 or 6 or 7 (1 + 5) (graduate/management) previous applicants will be considered).
Application form and further details from: Personnel, The Polytechnic, Wolfson Street, Wolverhampton WV1 1LX.

Contract Requirements

IBM OS COBOL + IMS
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ICL COBOL
HONEYWELL COBOL + IDS
POP FORTHANAL
PDF BASIC +2
INTEL 8080 ASSEMBLER
Call Richard or Suzy on 01-491 4706

Software Division.
Knight Staff Services Division of BOC Data solve and a member of Computer Services Association.

Computer Operators

£3600-£4800 (inc. Shift Allowance)

The Society is seeking applicants in the age group 20-35 years who have gained a minimum of four GCE 'O' level passes including Maths and English Language. The successful applicant will have at least 18 months experience of working in a Computer Operations environment and will form part of a team manning the Society's new UNIVAC 1100/80 series machine installed in its Computer Centre in the Baker Street area of London.

The position will entail shift work for which a substantial allowance is paid. Other benefits include modern catering facilities, contributory pension scheme, BUPA membership, life assurance and special staff mortgage facilities.

For application form write to:

D. L. Howard, Senior Personnel Officer, Personnel Department, Abbey National Building Society, 27 Baker Street, London W1.

ABBEY NATIONAL

Easter Holiday

CLASSIFIED COPY

Advertisements for the following issue should be sent as early as possible.

April 18th

Issue of April 18th, Thursday, 12th April

Issue of April 18th, Tuesday, 17th April

Your help and co-operation will be very much appreciated. Further details can be obtained from ... David Abbey, 01-261 8014, Telex number 28137.

University of Birmingham

Applications are invited for the post of

COMPUTER OFFICER

In the Centre for Computer Studies in the Medical School. Applicants will normally hold an Honours Degree or equivalent qualification, and should have at least five years' relevant scientific and commercial computing experience, preferably in medically related areas. They should be fluent in Fortran, Basic and Assembly level programming.

The successful candidate will be responsible for the systems analysis, design, programming and implementation of a wide variety of projects originating in the Medical School and Area Health Authority, and will generally assist in the Centre's activities.

Salary is on the either related scale 1B (£3384-£5604) or 1A (£3384-£5604) according to qualification and experience. USS benefits.

Applications, giving the names of three referees, should be sent by 7th May, 1979, to the Assistant Registrar, the Medical School, Birmingham B15 2TJ. Further particulars from the Director of the Centre at the Medical School. Please quote ref. CUCW.



WARRINGTON BOROUGH COUNCIL BOROUGH TREASURER'S DEPARTMENT

1. PRINCIPAL COMPUTER ASSISTANT PO10(9) (£9,342-£7,044)

2. SYSTEMS ANALYST/PROGRAMMER (2 posts) £617/2 (£5,232-£5,080)

both salaries inclusive of supplements.

Applicants are invited for the above posts in the Computer Section of the Borough Treasurer's Department.

The post of Principal Computer Assistant is accepted in charge in the Computer Section.

Duties will involve the leadership of a team of Systems Analysts and Programmers and ensuring, in the absence of the Computer Manager, that all aspects of operations are carried out effectively.

Applicants will be expected to possess good team leadership qualities and have several years' experience in systems analysis and programming work.

The possession of a degree or other relevant qualification would be advantageous.
The analyst/programmers will be required to assist in the development of new systems and the maintenance of current applications.
At least three years' experience of COBOL programming is essential and some experience of systems analysis would be desirable.
The Council's computer is an ICL 1901T which is currently running a wide range of financial and technical applications with on-line interrogation facilities being provided as a number of systems.
Plans have been made to install an ICL 2850 computer in October 1980. Application forms and job descriptions for the above posts may be obtained from the Personnel and Management Services Officer, Warrington Borough Council, Town Hall, Bankers Street, Warrington, to whom they should be returned by 27 April, 1979.

Institute of Basic Medical Sciences

(British Postgraduate Medical Federation and Royal College of Surgeons of England)

PROGRAMMER/ TERMINAL SUPERVISOR

for a PDP-11 Remote Job Entry Terminal which is being installed at the Institute, as part of the University of London's computer network.

Salary within the scale £3,883-£5,804 plus £202 p.a. London Weighting. (University of London Scale 18 - second band).

Further details from the Secretary to whom completed applications should be made by 27th April, 1979.

Institute of Basic Medical Sciences
Royal College of Surgeons of England
London W1P 6PD
London WC2A 3PN

NEWCASTLE UPON TYNE POLYTECHNIC

Chief Administrative Officer's Department

SYSTEMS ANALYST (ADMINISTRATION)

To be responsible for the design, development and maintenance of computer based information systems and related Management Services in connection with the Academic, Personnel, Financial and General Administrative activities of the Polytechnic.

Candidates, who should be professionally qualified and experienced analysts with an administrative background, will be expected to have particular experience in the design, development and maintenance of computer based information systems.

Remuneration is payable in accordance with the University of Newcastle upon Tyne salary scale, including supplements.

For further particulars and application forms, returnable by Wednesday 4th April, 1979, please send a stamped addressed envelope to the Staffing Officer, Newcastle upon Tyne Polytechnic, Newcastle upon Tyne NE1 7ST.

PROGRAMMERS

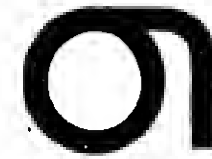
Gould Computer Systems, one of the largest service companies in the Midlands, is seeking both junior and senior levels of programmers to meet its continual market expansion.

Junior levels — £4,000 to £5,000
Senior levels — £5,000 to £6,500

Apart from a variety of interesting projects, we offer:

- ★ A realistic salary.
- ★ 4 weeks' paid annual holiday.
- ★ Paid overtime.
- ★ Travelling expenses.
- ★ Paid travelling time (where applicable).
- ★ Company car and extra holiday (after period of service).
- ★ Active involvement in the growth of the company.
- ★ Working for a person-oriented company.
- ★ The opportunity to participate in various social activities.

Can you utilise your skills more effectively? Find out by ringing Dave Wallis or Roger Radford on our Birmingham number (Evening: Dave Wallis on Leicester 865626).



Gould
Computer
Systems
Limited

Fifth Floor
Scala House
Holloway Circus
Birmingham 1
Tel: 021 643 6118/9

PROGRAMMERS

A lucrative and secure future in Western Germany

We are: The leading bakery product manufacturer and producer in Germany and are based in Pfungstadt (between Frankfurt and Heidelberg).

We have: An ICL 1903 A, 96 K, 4 EDS60, 4 MT, 2 printers, document reader and plan to change to new generation equipment by the start of 1981.

We need: Programmer(s) who can handle ICL equipment, GEORGE TFS and COBOL and who is willing to learn German.

We offer: Salary of around £10,000 p.a. with excellent prospects as well as other fringe benefits. Relocation expenses are, of course, being taken care of by the company.

If you are interested please contact:

Wilhelm Weber GmbH Bachworn
Ostendstr. 8
6102 Pfungstadt
West Germany
Phone number: 01049-6157-3081

Sending a CV and giving dates and/or times preferred for interview, which will take place in May 1979, in London.

South West Thames Regional Health Authority Tooting, London SW17.

SENIOR COMPUTER OPERATOR £5659*

Applicants with a thorough knowledge of George 3 and a high standard of technical expertise are invited to apply for this position, which will develop those with supervisory and/or management potential in ICL 1900 operations. The expanding ICL 1903T installation is shortly going to a 3 shift system, under George 3 and MOP.

DATA PREPARATION MANAGER £4775

For a small established and active CMC 6200 twin Key-to-Disk System, with 22 key stations. The Manager is responsible for planning and control of the workload, and control of outside bureau facilities.
CMC experience is preferred, but technical training will be given to those with management or supervisory experience of other systems.

SALARIES CURRENTLY UNDER REVIEW

For further details, phone Sylvia Lyons or Les King, up to 8.00 p.m. each evening, or write to:

Modern Computer Services Limited,
FREEPOST, London WC2N 6BR. 01-839 3351

*Includes shift allowance and London Weighting

MODEM

Data Processing Staff Consultants

Ireland - a small move to a bigger future

Two Systems Analysts

Aged 25-30 £5,500-£7,500 + benefits

For the subsidiary of a well-known UK food processor. The Systems Analysts will report to the Systems Manager and function as Project Leaders. You must have several years' experience in D.P. and systems analysis and also be conversant with marketing, financial and production systems. SAT/318/CW.

DP Manager

c. £10,000 - West of Ireland

Responsible for a number of installations. Ideal applicant should have good technical background in mini systems as well as proven managerial experience in the D.P. function. Experience with micros an advantage. DP/319/CW.

Systems Designer

c. £8,000 + Relocation expenses

The holding company of a large construction group wishes to recruit a Systems Designer.

You will have several years' experience in the design and implementation of project estimating, budgeting or control systems for large construction projects. You will be expected to take responsibility for clients in the Group who are primarily contract managers for major construction projects. SD/320/CW.

Systems Manager

Age around 30 c. £9,000 + benefits

For the subsidiary of a well-known UK food processor. The Systems Manager will report to and deputise for the Head of Computer Services and will be actively involved in formulating and implementing the data processing forward plan.

You will also act as business analyst identifying those areas in the company where D.P. can be applied most profitably.

Ideally you will have a minimum of five years' experience in D.P. plus three years in systems analysis, preferably gained in a System 3 environment with R.P.G. and experience of on-line applications is desirable. You will be thoroughly conversant with marketing, financial and production systems. SM/321/CW.

Analyst Programmer

Mid 20's Competitive Salary + benefits

A multi-national petroleum company using an IBM 370 seeks an Analyst Programmer in their mid 20's with several years COBOL experience.

You will work on a wide variety of applications, including on-line, and should therefore have an in-depth programming and systems experience.

A very competitive salary plus attractive fringe benefits will be paid to the right person. AP/322/CW.

Systems Analyst

c. £6,500 + Travel Allowance

A large organisation in the food processing industry is looking for a Systems Analyst with R.P.G. 2 and System 3 experience. Mid to late 20's.

The company is embarking on a range of interesting projects including on-line systems. Training, where appropriate, will be given and a generous travelling allowance will be paid. SA/323/CW.

Trainee DP Consultants

c. £6,000

A major international firm of management consultants seeks trainee D.P. Consultants aged 25-27 with several years' distinguished work experience, preferably in data processing.

Salaries are negotiable for candidates of graduate standard. Training will be given in Ireland, Geneva and Chicago. Career and salary progression within the firm will be rapid for people of the right calibre. DP/324/CW.

In all the above appointments our clients will in appropriate cases give assistance with relocation expenses.

Write with career details to date, or telephone for an application form, quoting appropriate reference number, to Benton & Bowles Recruitment, 197 Knightsbridge, London SW7. Telephone 01-581 1444. Please list separately any companies to which your application should not be forwarded.

If these posts do not exactly suit your training and experience, please write anyway, and we can consider you for other similar vacancies in Ireland as there is a continuous demand.



Benton & Bowles Recruitment
B & B Recruitment Limited, 197 Knightsbridge, London SW7.

in
association
with

**Computer Staff
Recruitment Ltd.**



T.P. Co-ordinator

Salary £4245-£5073 including supplement

We are seeking a man or woman for this post based at County Hall, Exeter. You should have experience in Teletexting, OSVS1, CICS or TASKMASTER and OSJCL. Responsibilities will include the day to day control of the Council's TP systems, liaison with users and suppliers and the provision of statistical information. Involvement in other aspects of technical support work will be expected. An enthusiastic approach and the ability to see, and put on with, what needs to be done are essential qualifications for the post.

The Authority currently runs a 1 MB I.B.M. 370/148 operative under OSVS1 and TASKMASTER. Conditions of service include a 37 hour week with flexible working hours; 21 days' annual leave; staff restaurant and social club.

Application form from the Assistant County Treasurer (Computer), County Hall, Exeter, Tel. 03241 7777 Ext. 2472, returnable by April 27th, 1979.

DEVON



THE UNIVERSITY OF LEEDS DEPARTMENT OF APPLIED MATHEMATICAL STUDIES

Applications are invited for the post of

COMPUTER OFFICER

In Applied Mathematics the duties of the Computer Officer will include (1) provision of assistance in computing to undergraduates and postgraduate students, and to staff members; (2) the control of an independent line of personal research. Candidates should possess a Ph.D. in some branch of science or engineering relevant to the Departmental interests, which is mainly in the fields of continuum mechanics, aerodynamics, mathematical physics, and numerical analysis. The appointment will be made for a fixed period of three years.
Salary at an appropriate point on the IA scale for Research and Academic Staff (£3882-£5685) (under review), according to age, qualifications and experience.
Further information on this post can be obtained from the Head of Department, Professor D. D. English (0532 31751, ext. 7304).
Application forms and further particulars may be obtained from the Registrar, The University of Leeds, 405 S.T. (under review) number 817/42. Closing date for applications 4 June, 1979.

UNIVERSITY OF WELLS CIVIL ENGINEERING AND BUILDING TECHNOLOGY

RESEARCH ASSISTANT (COMPUTER PROGRAMMER)

Duties will include programming on a range of research and teaching projects. Prior experience in civil engineering NOT required. A part-time appointment could be considered.
Range 18 £3384-£4992.
Requests (quoting Ref. CW) for details and application forms to Personnel Section (Academic), UWIST, Cardiff CF1 3NU.
Closing Date: 26 May, 1979.

PLYMOUTH POLYTECHNIC SCHOOL OF MATHEMATICAL SCIENCES

PRINCIPAL/ SENIOR LECTURER IN COMPUTING

Applicants should have a good knowledge of computers together with teaching, research or practical experience in commercial data processing and/or systems analysis. The holder of the appointment will be expected to be responsible for the development of a suitable course in the Department, and to supervise, develop and guide the work of the staff, and to be responsible for the recruitment and selection of staff.

PL 7047-£5944
SL 5081-£7872
N11 5410-£5588

Application forms will be received until May 1979 can be obtained from the Personnel Officer, Plymouth Polytechnic, Drake Circus, Plymouth PL4 8AA or phone 0752 44229 or 01752 44227.

Reinsurance

We are Greig Foster — a leading independent group of reinsurance brokers, based in the City of London.

We have recently installed our first computer — an ICL System Ten — and in conjunction with Dataskil are developing a management information and accounting system, the first stage of which is currently being implemented.

We are now looking for an experienced systems analyst/programmer to manage the existing set-up and to be responsible for future development. Such development could include involvement with word processing systems, further distribution of the existing system etc.

Applicants, probably in their mid-twenties to early thirties, should preferably have experience of small systems, and a knowledge of insurance or reinsurance would be a distinct advantage. A knowledge of basic O&M techniques would also be useful.

Salary will be negotiable together with other benefits commensurate with this level of appointment, including a company car on early date.

This is a unique opportunity for a person who likes to work with a fair degree of autonomy and is capable of becoming an integral part of a professional management team.

Applicants are invited to write, enclosing a curriculum vitae, to Michael Simmonds, FCA, Greig Foster Limited, Regis House, 43/46 King William Street, London EC4R 9AD.

For further information please telephone or write to:

Mr. M. E. Whale
Starrs M.R. Company Limited
Glover House, Small Brook
Sharnbury, Birmingham. Tel. 021-643 6472

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Mr. M. E. Whale
Starrs M.R. Company Limited
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Dr. J. J. J. J.

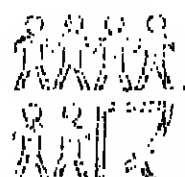
A UNIQUE OPPORTUNITY!

SENIOR PROGRAMMER
ANALYST

£5500 plus

south yorkshire

- * New Installation
- * On Line Systems.
- * Scope for Creativity



Ring Bill Baker
on 0742 738794 or 062 986 398
in the evening.

QUADRANT RECRUITMENT LTD.
Bank House, Queen Street, Sheffield

Our Client is an expanding manufacturing company with a reputation for innovation and high standards, whilst still maintaining an informal and cordial management style. It is not surprising, therefore, that the Data Processing Department is deliberately being developed along the same lines to encourage the individual to make the maximum professional contribution. The successful applicant will join a small high quality team and be involved in projects from the initial design stages through to successful implementation, thus offering a high degree of job satisfaction.

The computer shortly to be installed is a Data General Eclipse C350, which will have a 512K byte CPU, a 600 LPM Printer, 192 Megabytes of Disk Storage, Magnetic Tape and an initial terminal array of 4 Units which will grow to 25 Units. Program development will be in Cobol and Idea.

The systems to be developed will be interactive. They initially cover Financial Ledgers, Order Entry, Despatch and Invoicing, Finished Goods Stock Control and Sales Analysis. Future systems will concentrate on the production functions.

The applicant should have a Cobol background, possibly linked with some On-Line experience, but more importantly, will have a proven career record in commercial systems, which offers evidence of the ability to take advantage of this rare and exciting vacancy.

The rewards mean that on top of the salary indicated above the successful applicant will be able to look forward to all the normal fringe benefits associated with a successful company, plus subsidised canteen facilities and relocation expenses where appropriate.

COMPUTER FINANCING

Specialists in New and Used IBM Computers
and tailored Leasing Plans

require

SALES EXECUTIVES

£15,000 +

We are a young dynamic and very professional company dealing in the Brokerage and Second User Market for IBM 370 range of computers and peripherals. We are currently looking for two Sales Executives who will be required to call upon IBM users throughout the UK and will report directly to the Sales Director.

Basic Qualifications — Enthusiasm, ability, self-motivation and above all someone who's not afraid of hard work. Knowledge of IBM computers and peripherals is desirable, but not absolutely essential as we have technical support available.

A second language is useful, as we are an international company and some overseas travel may be inevitable.

Rewards. Good basic salary plus high commission should generate earnings in excess of £15,000 per annum. Company car available. Excellent working conditions and all the usual benefits associated with a young company.

Interested parties should contact Stephen J. Measures, Sales Director.

Computer Financing

Standbrook House
2-5 Old Bond Street, London W1X 3TB
Telephone: 01-499 7955 or 01-491 4153

SYSTEMS ANALYSTS

£6500 - £8000 Plus Car Allowance

We are a supplier of DEC Mini-Computers to commercial users (predominantly in London) and require experienced staff to design, control and implement applications software to a high standard, using on-line techniques.

You will take complete responsibility for projects from post-sales work to implementation and will be dealing with all levels of people, e.g. Directors, Technical Teams, Users, Outside Resources.

Your skills will be augmented by suitable training, where necessary and this will provide you with an increasing role to play in a growing company.

If you would like to know more about us call Peter Munks, 01-398 7235/7346, Gamma Business Systems (London) Ltd., 27 High Street, Thames Ditton, Surrey.

CAPP ASSOCIATES group provides permanent and contract recruitment services to clients and applicants

BELGIUM (BRUSSELS)

COMPUTER OPERATOR

Package C. £8K
(after tax)

NCR or IBM VS
experience

We are required to recruit a Senior Operator to work for a Consumer Bank based in Brussels, Belgium. The installation operates an NCR Crimion B500 series machine, using the VAX operating system.

Earnings, which will include shift allowances for night working, will grow to a level which typically yields a £8,000 after tax. This is much more attractive than UK salaries for the same type of positions; this is a permanent, not a contract job.

The Senior Operator needs good operations experience in preferably an NCR large machine environment or, alternatively, working under OS/VX on IBM hardware.

For further details please telephone or write quoting ref: CW 121-8J.

CAPP ASSOCIATES LTD. 01-686 9693

Computer Operations Production Manager

North of England c. £12,000 + Car

A unique opportunity has arisen to join the top echelon of one of Europe's largest commercial computer installations. Situated in the North of England the large multi-site, multi-processing configuration is an integral part of a successful and profitable business organisation.

The equipment is heavily utilised providing batch, on-line and real-time facilities to local and remote business users through an extensive and expanding communications network, together with a full time-sharing service supporting a substantial development work load.

Reporting directly to the Head of Computer Operations the person appointed will be totally responsible for the seven days a week, twenty-four hours a day operating of main-frames and associated equipment in a multi-site environment through multi-discipline shift staff.

Extensive experience of the management of large DP systems is a pre-requisite coupled with the ability to motivate a large staff, and a reflex appreciation of the pressures under which a successful business operates.

A total remuneration package in the order of £10,000 - £12,000 per annum is envisaged for this position. In addition, a company car will be provided, full removal expenses will be underwritten and there is an attractive fringe benefit package commensurate with the size of the organisation and the importance of this position.

TO APPLY:

Interested persons should write with career details to date to LEN CRAY at the address given below. Preliminary interviews will be held both in the North and in London in the next few weeks.

LORIEN COMPUTER SERVICES

OCS House,
Servia Road, Leeds LS2 7JN
Telephone 0532 444185 (Ansaphone service)

EDUCATION DEPARTMENT APPOINTMENT OF LECTURER 1 IN COMPUTING AND DATA PROCESSING

Applicants should have commercial experience in programming or systems analysis. A professional qualification in Computing or Data Processing would be an advantage, as would an interest in microprocessors. Application forms and further particulars (available upon receipt of a stamped, addressed envelope from the Principal, Monkwearmouth College of Further Education, Swan Street, Sunderland, SR6 1ED. Closing date for applications: 4th May 1979.

L. A. BLOOM
Chair Executive

Borough of Sunderland

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY LECTURESHIP IN COMPUTING SCIENCE

The Department of Computing and Control wishes to fill a new lecture post in computing science. Who applicants are expected to possess a broad general background in this subject and be prepared to teach computing topics at undergraduate and/or postgraduate levels. Your specialised knowledge is being looked for in one of two subject areas:

- (1) Computer systems, with experience in computer hardware, microprocessors, operating systems or networks and distributed processing.
- (2) Data bases. The appointment will be made to an appropriate post on the Lecturers Scale (2583 to £7164 p.a. plus London Allowance and USS benefits). Applications including curriculum vitae, list of publications and names of three referees should be sent to the Head of Department of Computing and Control, Imperial College of Science and Technology, London SW7 2BZ as soon as possible.

Jacquard Systems Mini-Computer Marketing in Europe

c. £12,500 + Car

An unusual opportunity has arisen for a professional computer person to join a fast growing mini-computer company in a senior marketing position based in High Wycombe. The company manufactures advanced micro-processor based automated office systems which operates data processing, word processing and communications simultaneously with equal facility. An extensive network of distributors has been set up throughout the world and the prime responsibility of this new appointment is to assist in appointing and supporting additional distributors in the U.K. and Continental Europe.

Extensive travel throughout Europe will be involved. The position will appeal to a technically competent, energetic computer marketing person already employed in a mini computer or consultancy organisation elsewhere.

This opening will appeal to someone who has sufficient marketing experience to appraise and appoint distributors to sell and install A.M. Jacquard products.

Candidates must be fluent in either French, Spanish or Italian, and are likely to have worked in the computer industry for at least 5 years. The ideal age range is 28-35 and a degree or equivalent qualification would be advantageous.

Salary is negotiable c. £12,500. The total remuneration package includes a motor car, generous pension scheme, free health insurance and other usual benefits. A bonus scheme is also operated.

In the first instance, please send your c.v. to, or request an application form from, Ron Buiges quoting reference RB/CW236.

Jean Dennington Limited

Personnel Consultants,
14 New Burlington Street,
London W1X 1FF.
Tel: 01-734 6134.

NEW ZEALAND LAND OF OPPORTUNITY ANALYSTS & PROGRAMMERS

The Company is a leading manufacturer and supplier of industrial, commercial and farming equipment in New Zealand. Products range from automotive parts to the largest earth moving machinery. A diversified product range together with related service organisations make this company a leading force in the country's development.

The installation is an IBM 370/125 based in Christchurch with a network of 13 terminals throughout the country.

They have vacancies for the following:

- * **SYSTEMS ANALYST** (Financial and Administrative) — with experience in Financial, Payroll or Shares Computer systems.
- * **SYSTEMS ANALYST** (Stock Systems) — with experience in Computer Stock Inventory Systems.
- * **ANALYST/PROGRAMMER** — with experience in an IBM DOS/VS COBOL environment.

All positions require a minimum period of four years' data processing experience on IBM/370 computers, together with a professional approach to user departments and the ability and personality to work in a team environment.

Rewards and benefits include: Excellent commencing salaries based on ability and experience. Assistance with relocation expenses and accommodation upon arrival will be offered to the successful applicants.

Mr Bob Jones, Managing Director of our New Zealand Associates, I.D.P.E. Personnel Services Limited will be visiting the U.K. for the purpose of interviewing prospective applicants during the last two weeks of April.

In the first instance, please telephone Chad Stolper of Prescott Computers at 01-242 2142 or, if you prefer, write to him at:

PRESCOTT COMPUTERS LIMITED

6 Bloomsbury Square
London WC1A 2LP

Tel: 01-242 2142

Telex: 23110

Opportunities in the City

Contract Vacancies

DILOG has a number of exciting development contracts starting in May and June. PL/1, COBOL, BAL, CICS/VS or Honeywell level 6 experience needed.

Call in confidence
Rayleigh (0268) 747143

DILOG LIMITED
145 High Street, Rayleigh Essex

Permanent Positions

- 2 Analysts: Forax, Loans £8000+
- 6 Programmers: COBOL, CICS/VS £5-7000
- 5 Programmers: PL/1, OS £6000+
- 3 Programmers: COBOL, OS £5-8000
- 1 Programmer: FORTRAN £5-7000
- 1 Programmer: AIMS £5-7500

£4000 - £7000+
North+Midlands
Analysts & Programmers
081-632-4184
(Telex: 4184) (Sampson Staff)

LEICESTERSHIRE CHARLES KEENE COLLEGE OF FURTHER EDUCATION Palmer Street, Leicester

DEPARTMENT OF SCIENCE AND MATHEMATICS — required for September 1st, 1979

LECTURER GRADE I

Computing for G.C.E. 'O' and 'A' levels and City and Guilds Programming. Some G.C.E. 'A' level Pure Mathematics teaching candidates. An appropriate degree in computing and/or mathematics is required and teacher training/ experience would be preferred.

Specialist knowledge of Computing Science or Business Data of Cobol, Algol, Basic and Assembly languages, would be an advantage.

Candidates and application forms, to be sent to the Registrar, University of Bedford, Bedford MK4 0BT by 20 April 1979 quoting reference A/23/CW.

William Key

SYSTEMS PROGRAMMERS

Berkshire & Manchester • Substantial Salary + car

Due to expansion in the UK and Europe, our clients, manufacturers of large powerful computers, are now offering a number of excellent career openings for Systems Programmers:

MANCHESTER 1 Systems Programmer

BERKSHIRE 2 Systems Programmers, one with training experience.

If you have significant mainframe experience particularly involving on-site support of Operating Systems, Assembler and FORTRAN compilers, gained with a manufacturer, large user or software house, this could be your opportunity.

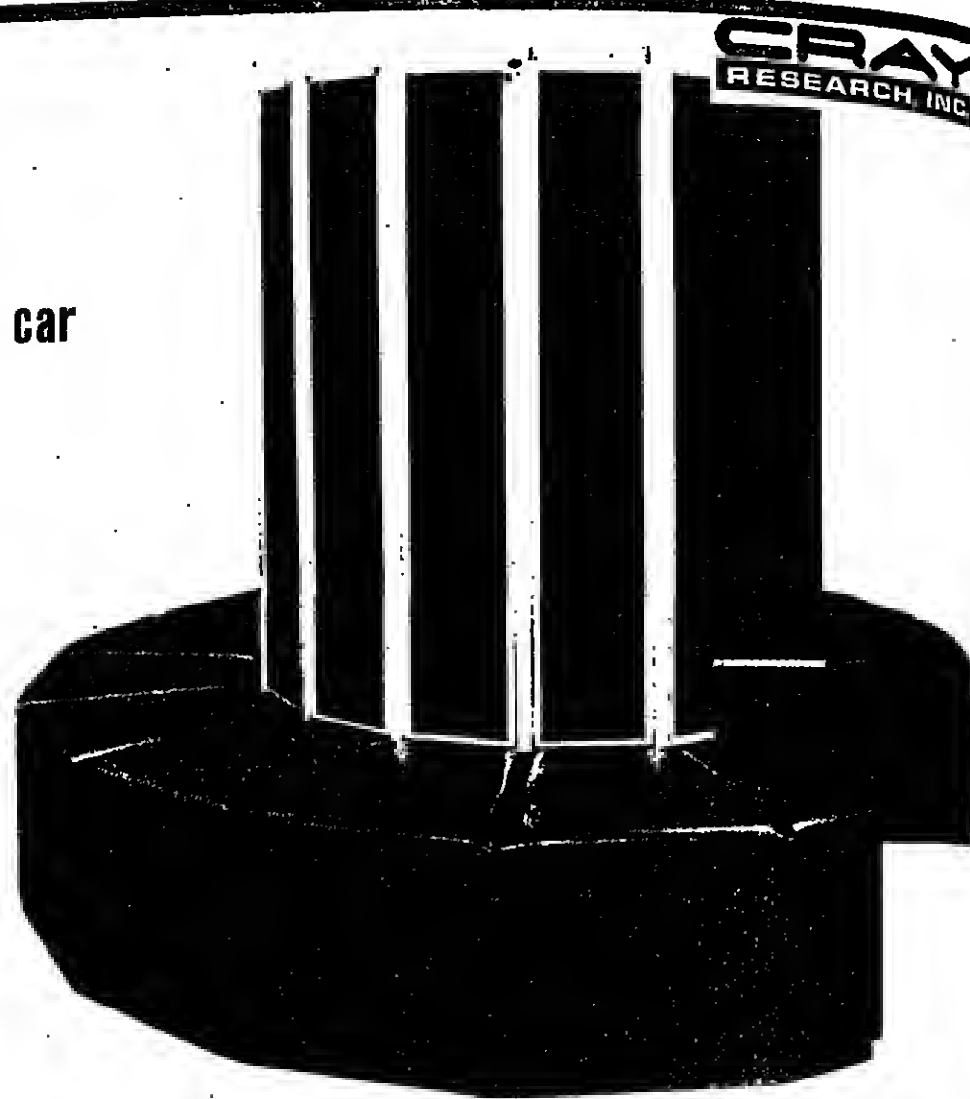
Large scale CDC, IBM or ICL experience would be advantageous.

Reporting to the Technical Support Manager you will have excellent opportunities for advancement on merit either in the System Software or in the Sales Support, Sales and Marketing areas.

Substantial salaries are envisaged, together with relocation expenses as necessary and a wide ranging benefits programme including company car and private medical scheme.

Interviews will be held in **LONDON, MANCHESTER or BRACKNELL** as appropriate, so telephone Richard Bulgin now on 01-493 2947 (day) or Rickmanaworth 76143 (evenings and weekends), or forward a C.V. to him Ref. C.9744 at William Key & Partners, Freepost 4, London W1E 8UZ. No stamp required.

WILLIAM KEY & PARTNERS, 4 HALF MOON STREET, LONDON, W1



STOP PRESS!

Other opportunities —

CUSTOMER ENGINEERS (Ref. CW 9743) INSTALLATION PLANNING ENGINEER (Ref. CW 9746)

INSTRUCTORS SOFTWARE & HARDWARE (Ref. CW 9747)

SALES EXECUTIVES

it's a big challenge

but it has equally big rewards

and outstanding prospects

There are two appointments waiting for fully experienced professional Sales Executives, probably in the 25-35 range. You will have gained your technical knowledge in IBM, DEC, ICL, CDC, UNIVAC or similar mainframe or mini environment, and must be able to communicate at all levels.

One executive will be responsible for Government and Defence Sales — the other for Education and Research.

For the first year a basic plus guarantee totalling well over £10,000 will be provided according to experience — second year expectation is at least £20,000, and after that it's up to you. The key's the limit! A company car and other substantial benefits are provided.

Some time will be spent at Head Office in Berkshire — so if you live in that area, or are willing to be relocated, that's an advantage.

The company, established and progressive, manufactures large scale computers which have proved to be very successful in both scientific and commercial markets.

What more can we say? It's an exceptional opportunity for those with the right background, ability and determination to be successful in a company that will give you every facility and full co-operation.

Arrange to see Richard Bulgin now — Today. Ring him on 01-493 2947 (day) or Rickmanaworth 76143 (evenings & weekends) or forward a C.V. to him Ref. CW9745 at William Key & Partners, Freepost 4, London, W1E 8UZ (no stamp required.)

WILLIAM KEY & PARTNERS LTD., 4 HALF MOON STREET, LONDON W1.



Substantial salaries + car

PLANNING ENGINEER (Ref. CW 9746) INSTRUCTORS HARDWARE and SOFTWARE (Ref. CW 9747)

VICTORIA APPOINTMENTS LIMITED
FOR THE BEST JOBS IN THE NORTH DON'T DELAY - PHONE **VW** TODAY!



NEW

MANCHESTER

IBM

INSTALLATION

SYSTEMS ANALYST
ANALYST/PROGRAMMER
SHIFT LEADER

Salary up to £7,000
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